

American Gas *Association* MONTHLY

New National Gas Advertising

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Organize for Defense Program

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Federal Housing Opportunity

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Shortest Way to More Sales

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Production Problems Reviewed

July-August



1940

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"The Scrubbers"—A photograph by Herbert Kerr, Knoxville Gas Company, which won a \$5.00 award in the contest for MONTHLY frontispiece illustrations.

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JAMES M. BEALL, *Editor*

CONVENTION PREVIEW

.... National Events Will Shape Fall Program

IT seems certain that tremendous world events will play a leading part in the programs for the general and sectional sessions at the annual convention of the American Gas Association in Atlantic City, N. J., the week of October 7. A writer has said that the world has more news now every twenty-four hours than in six months at the time of the American Civil War. At such a rate of speed, with current events influencing nearly every move, it is difficult for the program committees to forecast with marked accuracy the titles of addresses and the names of speakers.

The chairman of the General Sessions Program Committee, George S. Hawley of Bridgeport, Conn., after participating in numerous conferences and corresponding with his associates on the committee, has stated that the program for the general meetings is in a tentative state. In his opinion the subjects and speakers will be outstanding and will fully merit the attention of the members and guests in attendance and it is believed that no matter what the developments of the intervening months, the pressure of events insures a maximum registration.

While it is not expected that by October any informed speaker will attempt to look far into the future, the Program Committee believes it desirable to arrange up-to-date discussion of things as they are with a review of their probable impact upon the near future of the gas industry.

Some of the subjects suggested for inclusion in the general sessions are national resources, research, advertising, regulation and, of course, the ever-present sales problem. These, and other equally significant topics, will be presented by persons of acknowledged national reputation. They are sure to bring to the convention some concise analyses and fresh viewpoints on the topics assigned to them.

Naturally the most important problems of the industry will appear upon the general sessions program but most, if not all of them will be leavened by the imponderables of national conditions. The extent to which the activities of

the Committee on National Defense will be reported at the convention meetings can only be surmised at this time but it may be regarded as a certainty that the high spots will be before the convention.

A notable feature of the general sessions program will be the presentation of Association awards in recognition of exceptional achievement. These include the A. G. A. Meritorious Service Medal, the Charles A. Munroe Award, the Beal Medal and McCarter Medals.

The program committees of the various sections have been equally busy and here again it seems assured that the war situation will appear time and again in one phase or another of the discussions in the sectional meetings. As an example, the Technical Section will include a paper on "Technical Problems of the Gas Industry in Connection with National Defense."

As has been the custom for some time, Monday, October 7, will be Natural Gas Day at the convention. The morning will be devoted to important natural gas technical and research committee meetings, closing with remarks on the status of the industry by natural gas leaders from various sections of the United States. A luncheon session at 12:15 will feature an outstanding speaker from outside the industry.

The afternoon session is of immediate interest to all natural gas men. The first paper will deal with "Liquified Petroleum Gases in Utility Operation" and the second, "Methods of Valuation-Production System Property." Both papers will be followed by discussions led by authorities in these fields.

The Accounting, Commercial and Industrial Gas Sections as well as the Natural Gas and Technical Sections, are planning comprehensive programs to cover the latest developments in their respective fields. Home Service will also be adequately represented on the convention program. Details of these meetings will appear in the September issue of the MONTHLY.

The Fifth Year . . . New Plans for Association's National Advertising



T. J. Strickler

THE period July 1, 1940–June 30, 1941 inaugurates the fifth year of national advertising conducted by the gas industry under the auspices of the American Gas Association. Plans for the new advertising year were approved May 22 by the Committee on National Advertising. The following day the Association's Executive Board also approved the plans.

Since its inception the campaign has adhered closely year by year to certain long-term objectives. Its broad purpose, defined in 1936 and faithfully held to ever since, is "to promote public acceptance of gas as a modern, efficient fuel for household, industrial and commercial purposes for which heat is required." The specific objectives sought are:

Advertising Objectives

To build up and establish in the minds of millions of housewives throughout the United States the feeling that gas is a thoroughly modern cooking fuel—that it has certain inherent advantages which are reflected in actual cooking results.

To establish definitely the feeling that gas ranges being manufactured today are as modern in their operating features and as attractive in appearance as those being advertised extensively by the electric industry.

To promote an appreciation of the economic advantages from the cost standpoint of using gas for cooking.

To create an appreciation of the merits of gas for cooking so as to encourage present gas customers, including the younger generation, to continue the use of gas and at the

same time create the urge to replace old and obsolete equipment with modern gas ranges, rather than other types.

To strengthen the position of the gas industry in its competitive situation with other industries by inviting attention to the many advantages provided by the use of gas for the four big jobs in the home—cooking, water heating, refrigeration and house heating.

To promote the use of gas fuel and modern gas equipment in those industrial and commercial fields which have been selected as of great value from the standpoint of potential load and profit possibilities.

Campaign Spurs Sales

We have made substantial progress toward the attainment of these goals. That progress is confirmed by official statistics of the industry. Sales of modern gas ranges are definitely on the up-grade. We are selling more and more high quality ranges. During 1939, 83% of all sales were oven heat control ranges as compared with 77% the year previous. Sales of other domestic appliances are also on the increase. Moreover, 1940 finds us with more gas customers on our lines than ever before—a total of 16,500,000.

The CP gas range has taken hold of the public because the story of this newest and superior cooking equipment fell on ground made fertile by national advertising. There are more than 115,000 of these ranges in service now, and fully that many more will be sold this year.

The growth of industrial and commercial gas sales has been a source of pride to all of us. Sales of gas for

these purposes now represent 50.7% of total gas sales and the revenue derived from those sales is 32.3% of the total gas revenue. Unquestionably, national advertising has been an influential factor in all of the above.

Public opinion is swinging our way with increased acceleration. The morale of the industry is better than it has been in years. These accomplishments are not alone confirmed by those within the industry, but by outsiders as well. Our advertising has been on the right track. It has hammered home to the public the fact that gas is modern, and that the modern way calls for cooking with gas. Considered from every angle, the campaign to date has been a success and has registered very definite progress.

The question has been raised, "How does the A. G. A. campaign measure up in effectiveness against other advertising campaigns of a cooperative nature?" To a great extent the worth of an advertising campaign is determined by the effectiveness of the advertising itself. This in turn is measured in several ways. Constant checking and re-checking of reader reaction is one accredited method of doing this. Our advertising agency retains an organization to do this to guide both itself and the committees in charge of advertising.

Survey Proves Effectiveness

What this independent agency's checks have revealed are a further indication of our progress. Thousands of persons of all types and income groups in all parts of the country are called upon in the course of the year and their observation and identification of our advertisements are recorded. These reactions are then translated in various ways, one of the most pertinent

of which is a dollars-and-cents accounting of the effectiveness of the advertising in question.

And here's what a check of our advertising shows: On the basis of the number of persons observing it the cost of the current A. G. A. copy averages \$8.74 per thousand, or approximately eight and seven tenths of a cent per person. On the basis of those who can correctly identify it the average cost of \$42.66 per thousand or about 4.2 cents per person. Now it is of interest to compare these costs with those of other leading association campaigns.

The A. G. A. observation cost of \$8.74 per thousand persons compared with a cost of \$13.24 for the electric range advertising of the Modern Kitchen Bureau, \$12.93 for the Ice Industries, and \$13.77 for the Association of American Railroads. The identification costs of the A. G. A. advertising of \$42.66 per thousand compared with a cost of \$103.45 for the Modern Kitchen Bureau, \$105.12 for the Ice Industries, and \$65.95 for the Railroad Association. These figures tell their own story. They show that we are getting real dollars-and-cents results from our advertising, that our advertising is efficient, effective, economical.

Theme Fundamentally Sound

This is due to several things. First, we are basically sound in our theme. Then, we are putting our money into well established, high-class national magazines. The media we use are keyed to the objectives of the campaign. We're not wasting our money talking to the wrong kind of people. On the contrary, our ad-

CONSUMER MAGAZINES

Publication	Circulation
Saturday Evening Post	3,250,000
Good Housekeeping	2,350,000
Ladies' Home Journal	3,500,000
McCall's	3,000,000
Woman's Home Companion ..	3,350,000
Better Homes & Gardens	2,050,000
True Story	2,050,000
	19,550,000

TRADE MAGAZINE

Gas Appliance Merchandising	7,234
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vertising is being read by those who have money to buy.

Then, too, our advertising has reached many millions. To be exact, a total of 373,800,000 messages have been delivered to the American people by our industry during the four years this campaign has been in progress. It would have cost us ten million dollars to have sent this number of sales letters, figuring on postage of three cents alone—more than five times what we have spent for our over-all advertising, sales promotion and publicity campaigns in four years.

Our campaign is national in scope. Its beneficial effects, however, are local. It reaches into local communities. It influences local buying decisions. It moulds local opinions in our favor. And we have made progress in localizing it more and more through tie-in advertising material. The local utility's successful participation in this national campaign is bound to be in direct proportion to the extent to which it ties up with it. It is gratifying to be able to report that in 1939 more companies tied in with the national campaign than in the previous year. And so far in 1940 the tie-in activity is going forward at an encouraging pace.

In 3½ years, 592 gas utility companies have purchased a total of 3,189,869 pieces of tie-in advertising. This reflects progress, too.

In approaching the job of shaping advertisements for the new advertising year there was prepared no less than 35 experimental layouts with different copy slants in an effort to develop a fresh and more effective advertising technique for telling the gas industry's story to the public. Most of these experimental ideas were eliminated for one reason or another until two campaigns remained "in the finals" for most careful consideration.

Consumer Reaction Tested

These two campaigns were distinctly different in approach, but it was felt that each of them had certain very definite points of merit. At this stage it was decided to make a consumer test for the purpose of determining the relative effectiveness of the two campaigns in the opinion of housewives, the persons whom we want principally to influence by this advertising.

The agency, McCann-Erickson, Inc., planned the test, developed the questionnaire to be used, and then employed an independent survey company to have their trained investigators make house to house calls and tabulate the results. The interviews were carefully planned with respect to covering the correct proportion of women (a) in different income groups, (b) in different types of communities, i.e. city, suburban and small town, and (c) in different age groups.

The style of advertising which came through this consumer test

MAGAZINE SCHEDULE, 1940-41 DOMESTIC GAS ADVERTISING

	1940						1941					
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Saturday Evening Post	21 4BJ	19 R	16 4BJ		18 R		22 4BJ	19 R	17 4BJ	21 R		
Good Housekeeping		R			R		R		R		R	
Ladies' Home Journal	R		R			R		R			R	
McCall's		R		R			R		R			R
Woman's Home Companion	R		R			R		R		R		
Better Homes & Gardens		4BJ		R		4BJ		R		4BJ		
True Story		R		R		R			R		R	
Gas Appliance Merchandising	X			X			X			X		
R = Range ads, four colors.												
4BJ = 4 Big Job ads, four colors.												
X = Trade ads, black and white.												

R = Range ads, four colors.

4BJ = 4 Big Job ads, four colors.

X = Trade ads, black and white.

with the highest ratings is the campaign to be used during 1940-41. The caption repeated in each ad is the keynote for the campaign. It reads: "Why 3 Out of 4 Women Now Choose Gas For Modern Automatic Cooking."

This, we believe, is a very effective sales argument for gas and modern gas ranges and it will gain in effectiveness with the constant repetition it will get by appearing in each advertisement. This key-note statement is basically competitive, but cleanly competitive; it establishes definite leadership for gas; it embodies a "follow the crowd" appeal in a way which will be effective in influencing women favorably toward gas.

The top illustration in each ad will illustrate the "3 out of 4" caption in an interesting way. This is not merely an attention getter but a carefully worked out device aimed to secure a high readership for the four adjacent lines of copy—the statements bringing out important advantages of gas and gas ranges put into the mouths of the four women illustrated.

Four Colors To Be Used

All of the national magazine advertising will be in four colors. This is thoroughly consistent with past results and also with the objective of building public prestige for gas.

The main illustration in each ad shows modern gas ranges against a background of attractive, thoroughly up-to-date kitchens. One point that came out strongly in the consumer survey was that women are tremendously interested in these colorful kitchens. The kitchens shown will not only be attractive but practical as well. Authenticity of the kitchen layouts and designs as shown in each ad has been passed upon by the architectural and decorating experts of a well-known national women's magazine.

The text matter in each ad is brief and directly to the point. The copy is written in women's language, and contains a real selling punch.

"Gas, the Wonder Fuel for Cooking" is the new slogan for the campaign; and the CP range is featured in each advertisement as offering the ultimate in modern cooking appli-

ances. The baseline theme for each ad continues to read, "Let Gas Do the 4 Big Jobs—Cooking, Water Heating, Refrigeration, House Heating."

In addition to this series dealing primarily with the gas range and gas for cooking a separate series of advertisements dealing with all four of the major domestic uses of gas will appear during the year. The first ad of this series carries the headline, "Life Begins When You Let Gas Do the 4 Big Jobs." The schedule of insertions for both series of advertisements appears elsewhere.

The magazines which will carry the four-color advertising are the same, with one exception, as those used last year. True Story has been substituted for American Home, because it assures a minimum of duplication with other magazines on the list and effects a better distribution of circulation in relation to the purchases of gas ranges.

Publicity Program

Publicity activities carried on in connection with the program started with one all-important initial objective—to change the public's impression that the electric range was the only truly modern range; and to win for the modern gas range more than equal editorial recognition and public support. This objective had to be attained widely in both the magazine and newspaper fields before there could be any noticeable change in this public attitude.

To deal with the magazines first: We believe that facts were sufficiently strong to win their support. Consequently we marshalled information which established proof of the superiority of the modern gas range. We have consistently gathered the news of annual improvements and changes in the modern gas range, as well as the CP range and other gas appliances, and have submitted this news in such a manner that the editors themselves say the material is unsurpassed.

Gradually, illustrated articles on the modern gas range, as well as articles on or including other gas appliances appeared with increasing frequency in the national women's magazines, despite the fact that competition spends about five times

as much for advertising as the gas industry does. However, so convincing has been our proof of the superiority of gas cooking equipment that in the face of a far greater volume of competitive advertising, editors have accorded us most generous treatment. The ratio remains 50-50. Before the start of this campaign the ratio was preponderantly against gas.

To January 1, 1940, 78 articles on gas and gas appliances have appeared in national magazines—totaling a circulation of 128,558,073—or an average of 1,673,847 circulation per gas message.

In the newspaper field, we had a different problem. We had to break down stiff editorial resistance to using the words, "the modern gas range" or "the modern automatic gas range" which editors were convinced was a trade name bearing the stigma of advertising. That job was successful because week after week, month after month, our editorial stories and illustrated feature notes contained the convincing truth about gas and gas appliances.

As of January 1, 1940, our publicity material has appeared in newspapers with a total circulation of 990,123,961, and lineage of 3,293,285. In the field of radio we have made substantial progress. To date more than 900 daytime broadcasts on gas cooking and allied subjects have resulted from the scripts issued by us.

Editorial Assistance

Aside from this three-directional and definitely sales-slanted material, we have completed many other activities which might be termed a general service in gas publicity. Briefly, these include editorial assistance in home service as the occasion arises; preparation of requested articles; material to any agency preparing a newspaper campaign for a local company, and special photographs and illustrations. Also included were special publicity services to manufacturers who have material that is particularly good to send to editors.

We have developed plans for this next year of publicity which are sufficiently flexible to permit of



J. P. Leinroth

and E. D. Milener, Secretary, Industrial Gas Section, American Gas Association, New York, N. Y., Secretary.

Industrial and commercial gas advertising scheduled to appear during the next advertising year will appear in leading trade publications serving seven important fields, as described elsewhere in this article.

change of pace as we uncover and build news and obtain pictorial material. We plan to keep the magazine editors converted to gas as they now are. We plan to continue the radio talks. In the newspaper field we shall continue our regular illustrated features and special stories.

Sales promotion activities designed to encourage local tie-in with the national campaign will be continued along the same general lines as formerly. During the new advertising year two portfolios and six special bulletins will be offered. These will include a four-color blotter, a four-color bill insert, blow-ups and reprints, tie-in newspaper ads and a photo service sheet.

Industrial Gas Advertising

The current year's advertising conducted by the Advertising Committee of the Association's Industrial Gas Section has appeared in 17 publications covering 9 different industrial and commercial fields. Its objective has been to promote the use of gas and modern gas equipment in those fields which have been selected as of greatest value from the standpoint of potential load and profit possibilities.

The importance of industrial and commercial gas—and of advertising featuring industrial and commercial uses of gas—is amply demonstrated by a review of the statistics of the industry. They show that in 1939:

1. Industrial and commercial gas sales represented 50.7% of total gas sales.

That part of the national advertising effort which is devoted to the promotion of gas for industrial and commercial purposes is supervised by the Advertising Committee of the Association's Industrial Gas Section. The personnel of this committee is as follows: J. P. Leinroth, General Industrial Fuel Representative, Public Service Electric & Gas Co., Newark, N. J., Chairman; F. B. Jones, Director of Industrial Gas Sales, Equitable Gas Company, Pittsburgh, Pa., Vice-Chairman; C. G. Cassidy, Advertising Manager, The Peoples Gas Light & Coke Co., Chicago, Ill.; Henry Obermeyer, Assistant Vice-President, Consolidated Edison Co. of New York, Inc., New York, N. Y.; T. H. Spain, Advertising Manager, Public Service Electric & Gas Co., Newark, N. J.,

2. Industrial and commercial gas revenue represented 32.3% of total gas revenue.

The total circulation of the national publications used in the 1939-40 campaign was 226,311. The total number of advertising impressions was 2,726,744. The copy approach has been similar to that used in previous years. It has emphasized both the many advantages of gas as a fuel, and the modern gas equipment which is now available to utilize gas most efficiently and most economically.

This year, more so than formerly, specialized copy has been prepared for each individual field; action photographs of modern gas equipment installations have been featured in each advertisement; wherever possible, facts and figures showing actual performance in specific applications—or actual testimonial statements—have been used;

both headlines and copy have been packed with concrete specific data; names of plants with gas installations, as well as names of manufacturers of equipment have been featured. All this has helped to give industrial and commercial gas advertising increasing effectiveness.

In this connection, it is a pleasure to report that gas company executives and manufacturers have been encouragingly cooperative in the matter of providing suitable material for advertising purposes. As a result, the Committee is getting more and better photographs, more actual data about gas performance in specific installations, and therefore, more resultful advertising.

"Trend to Gas" Chart Continues

The "Trend to Gas" Chart which was originated five years ago, is carried as an integral part of each industrial and commercial gas advertisement. It is encouraging to note, too, that an increasing number of gas companies and manufacturers are using this same slogan chart in their own advertising and promotional literature, in order to tie in with the national campaign. The appropriateness of this slogan—The Trend Today Is to Gas; the fact that it expresses graphically what is actually happening in the industrial and commercial field; the consistency with which it has been used without change; the correlated use of it by gas companies and manufacturers—all these have given this slogan an increasing effectiveness.

Each month a booklet containing

INDUSTRIAL AND COMMERCIAL GAS ADVERTISING FOR 1940-41

Fields To Be Reached	Publication	Pages
Metals Industry	The Iron Age	12
	Steel	13
	Metals & Alloys	12
	Metal Progress	12
	Heat Treating & Forging	6
Baking Industry	Bakers Helper	6
	Bakers Weekly	6
Food Processing	Food Industries	12
Ceramic Industry	Ceramic Industry	12
Hotels and Restaurants	Hotel Management	6
	American Restaurant	12
	Chain Store Age	12
	(Restaurant & Soda Fountain Edition)	
Hospitals	Modern Hospital	6
Processing Industry	Chem. and Met. Engineering	12
General Manufacturing	Industrial Heating	12
Business Executives	Business Week	13

preprints of all advertisements to appear the following month is prepared and sent to gas company members, equipment company members, and individual members of the Industrial Gas Section. Its purpose is two-fold:

1. To give advance information of advertising which is to appear.
2. To provide an opportunity for those who are interested to order reprints of advertisements in advance, for use in their own advertising or sales work.

For the coming year it is proposed to continue the present trade and business magazine advertising program—with a minimum of changes in media. One new magazine will be used—*Business Week*, in order to better reach top men in industrial concerns.

It is important to note that the fields reached with this advertising program now—and to be reached during 1940-41—represent only those which it is

felt are most important. There are, of course, many other fields which are worth cultivating with advertising, but with existing funds there is, of course, a limit. It has always been the policy of the Advertising Committee of the Industrial Gas Section to cover a relatively few fields well, rather than spread advertising activities too thinly over a larger number of fields.

We face the new advertising year confident that the campaign described here will bring us further along the road toward the attainment of the long-term objectives we have in mind. Of tremendous help to us and to all who believe in gas industry advertising on a national scale, are the splendid national magazine campaigns sponsored by the appliance manufacturers. Again I repeat the hope and belief that national advertising is a permanent institution in the gas industry.

extraordinary growth and development, and have been credited with many outstanding achievements.

He leaves a widow, Mrs. Pauline I. Hartman; two daughters, Miss Beverly Hartman and Mrs. John Mason; a brother, Paul Hartman, and his mother, Mrs. M. Hartman.

Funeral services were conducted in Yonkers, June 10, by the Rev. Warren Churchill, Pastor of Morsemere Methodist Church of that city. A large delegation of friends of the family and business associates, including Chairmen and past Chairmen of the Accounting and Technical Sections of the Association, attended the services.

New Plant to Liquefy Natural Gas

A COMPLETE new plant for the manufacture and storage of natural gas in a liquid state will be constructed immediately by The East Ohio Gas Company, Cleveland, Ohio, according to an announcement by C. E. Gallagher, president of the company. The undertaking is believed to be the first of its kind.

Estimated to cost approximately \$1,000,000, the plant will enable the company to liquefy natural gas, hold it in storage in a liquid state, and re-gasify it as may be required during the days of peak demand in mid-winter or in case of emergencies. The new facilities are expected to aid the company in maintaining normal service to industrial users for increased activity as a result of the national defense program.

The new process of storing liquefied gas, developed after experimental work by East Ohio, contemplates liquefaction of natural gas in the fall of the year when a portion of the gas delivered through transmission lines is normally in excess of the demand. Natural gas is first compressed to about 600 lb. pressure, then cooled by a refrigeration system which brings the temperature of the liquid natural gas to about 250 degrees below zero F. In the latter state it is stored in specially built steel tanks, insulated with a 24-inch thickness of cork, which retains the gas in liquid form. When customer demand requires, the liquid gas is re-gasified into the original natural gas state by the use of steam.

While it requires 24 hours to store 4,000,000 cu.ft. of natural gas in liquid form, it will be possible to re-gasify at the rate of approximately 3,000,000 cu.ft. per hour. The storage capacity of the new plant is about 250,000 cu.ft. of liquid gas which is equal to about 150,000,000 cu.ft. of natural gas in its gaseous state. This compares with an average daily domestic demand on the company's facilities of 85,000,000 cu.ft. of natural gas.

Location of the new plant, which will include three spherical tanks made of special nickel steel, each 57 ft. in diameter, will be at the main works of East Ohio at Cleveland.

Gas Industry Loses Hugh Hartman, Veteran A. G. A. Staff Member



H. W. Hartman

HEADQUARTERS staff of the American Gas Association suffered a severe loss in the untimely death on June 8 of one of its most respected and beloved members—Hugh W. Hartman. His sudden death of a heart attack at his home in Yonkers, N. Y., at the age of 53 was a shock to his legion of friends throughout the gas industry which he had served faithfully for many years.

As assistant manager of the Association and as secretary of both the Accounting and Technical Sections, Mr. Hartman's activities brought him in contact with thousands of people both within and without the industry. His organizing ability and his unfailing good humor were widely known at the scores of conventions, conferences and meetings in which he played a prominent part. That he held a high place in the esteem of those with whom he worked is attested by the various scrolls which lined his office wall—all presented by groups within the gas industry who wished to make a permanent record of their friendship and respect. There was none more loyal to the gas industry and none who will be missed more by headquarters staff than Mr. Hartman.

Mr. Hartman enjoyed the distinction of

being the oldest member of the Association's headquarters staff in New York in point of service. In fact, his work with a national association serving the gas industry antedates the organization of the American Gas Association. He was employed as assistant secretary of the old American Gas Institute, which in 1918 combined with the National Commercial Gas Association to form the American Gas Association.

Educated in the public schools of Chicago, Illinois, and Kent College of Law, Mr. Hartman immediately became affiliated with the gas industry. His first position was in the collection department of The Peoples Gas Light and Coke Company, Chicago, in 1906. In 1908 he became secretary to the engineer of distribution and, in 1910, was made secretary to the chief engineer of the same company.

His first trade association connection began in 1915 when he was appointed assistant secretary of the American Gas Institute. He continued with the Institute until the organization of the American Gas Association in 1918 when he was appointed secretary of the Technical Section of the newly formed association. He was appointed secretary of the Accounting Section in 1919. He advanced to the position of assistant secretary-manager in 1925, retaining the duties of secretary of both the Accounting and Technical Sections. Subsequently he assumed the additional duties of assistant manager of the Association.

Under Mr. Hartman's direction the Accounting and Technical Sections have shown

It's Wonderfuel!

THIS year's New York World's Fair goers have found Gas Wonderland, the gas industries' exhibit group, the outstanding new attraction at the Fair. Here are some of the scenes which are attracting enthusiastic crowds in larger numbers than those who attended last year's favorite exhibits.



are views of Tiny Town, a typical American suburb reproduced in miniature. It contains all the features of the average small town, such as stores, homes, factories, churches, etc., which pop open to tell the story of gas in the home, commerce and industry.

Left—Diminishing lens make this cozy-looking "mini" basement, viewed through peep holes, seem as if it might be a doll's house. Actually, it is fully gas-equipped and large enough to enter.

Right—This "mini" kitchen, also viewed through peep holes, features gas appliances and a revolving shelf which brings objects in the cupboard directly in front of the housewife.



Left—In the center of the "Court of Flame" is a giant mirrored cube above which burns a majestic gas torch. Center—The "Fountains of Flame and Water" with flames of gas of ever-changing color which shoot up through columns of mist and water. Right—Here and above

National Defense... The Gas Industry Organizes To Aid Government Program

LATE in May the Executive Board through President Walter C. Beckjord and Managing Director Alexander Forward pledged the services and support of the manufactured and natural gas industry to the various departments of the government concerned with national defense.

The four-point program covering: (1) plans to provide uninterrupted service to industry and the public, (2) measures for protection of properties and lines, (3) assistance in production of munitions and (4) cooperation from the industry's personnel, was contained in communications sent to the Advisory Commission of the Council of National Defense, the Departments of War, Navy and Interior. Appreciative acknowledgments were received from Chairman Edward R. Stettinius, Jr., of the Advisory Commission, who stated that "the gas industry will in due time be advised of the assistance which it may be called upon to render"; from Assistant Secretary of War Louis Johnson; Rear Admiral Robert L. Ghormley, Acting Chief of Naval Operations; and Harold L. Ickes, Secretary of the Interior.

Defense Committee Created

The Executive Board also authorized the creation of a Committee on National Defense for the purpose of assisting the United States Government with its defense program to the extent that the gas industry might be useful in such a program. George F. Mitchell, President, The Peoples Gas Light & Coke Company, Chicago, was appointed Chairman.

The first meeting of the committee was held June 28 at Association Headquarters at which, in his opening remarks, Chairman Mitchell referred to the broad representation of the industry in the selection of the committee personnel and the inclusion of many with special knowledge and experience

in matters pertaining to national defense.

It was decided to take active steps to insure the collection and collation of all available information and statistics so as to permit building a definite industry plan. Arrangements were in-



George F. Mitchell, who heads the newly organized Committee on National Defense

itiated to determine how the many phases of a national defense problem have been handled by the gas industry in other countries, as for example, property protection, etc.

Plans were made for full use of statistical information now in possession of the Association with respect to plant capacity and by-product production and a subcommittee was appointed to study available data and plan a suitable questionnaire to secure additional information which may be required.

Close liaison was arranged for so that the committee may be constantly in touch with the Power Committee of the Advisory Commission.

An interesting angle of the discussion and of the various suggestions

which were made at the meeting or have come to the attention of Headquarters, has been the feeling that whenever possible the existing facilities of the American Gas Association, through its departments and committees should be utilized for such work as may be assigned to the Committee on National Defense. To those who know the Association set-up intimately, it will probably come as no surprise to learn that many of the problems can almost automatically be so routed. An example: The numerous personnel problems which may be anticipated, calling of company employees into military service of the nation, etc., will be assigned to the Committee on Personnel Practices. Its Chairman, H. L. Donaldson, had already offered the services of his committee to Chairman Mitchell.

A similar offer was received and favorably commented on from Ira L. Craig, Chairman of the Rate Committee.

Sections Get Assignments

The principal operating problems in connection with the production of war matériel were assigned to the Chairmen of the Technical and Natural Gas Sections.

Reference has already been made to the representative nature of the committee personnel, as will be seen from the accompanying list; however, it is anticipated that as additional demands for services are made upon the committee, specially qualified members of the Association will be drafted by Mr. Mitchell.

An interesting and significant statement made during the committee meeting, when discussing property protection, was that of Frank L. Ball of the New England Power Association: "You can do more for protection by proper lighting for less money than any other method. You can do a great

deal with flood lighting at very moderate expense."

No one who has been privileged to sit with the committee and participate in the necessarily broad studies which must be undertaken can fail to appreciate the splendid patriotic spirit motivating the committee members, busy executives and engineers who have unhesitatingly and willingly accepted the call for service.

Oscar L. Moore Dies

OSCAR L. MOORE, retired Southern California Gas Company executive, died in Los Angeles on June 4 at the age of 58. Mr. Moore was a former member of the Los Angeles Gas and Electric Corporation, serving for many years as manager of the customers department in that organization. At the time of his retirement in 1939 he had a record of 35 years' continuous service in the utility business in Los Angeles.

CP Ranger Officers Receive Trophies



Members of the sales staff of Barker Brothers, Los Angeles, who received national CP gas range trophies from W. M. Jacobs, Pacific Coast regional manager, at a dinner given by the Southern California Gas Company and the Southern Counties Gas Company. In the center is Mrs. Cora Reigelman whose total of 280 gas range sales in 1939 elected her to the post of National Commander of the CP Ranger Club for 1940. Others in the picture are, left to right: Edmund Vojae, National Vice-Commander; V. T. Pender, department manager; Robert E. Slater, National Adjutant, and Ralph E. Nelson, Regional Commander, Pacific Coast

Committee on National Defense

George F. Mitchell (Chairman) President, The Peoples Gas Light & Coke Co., Chicago, Ill.

Frank C. Adams, President, Association of Gas Appliance & Equipment Manufacturers, New York, N. Y.

E. R. Acker, President, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

Frank L. Ball, New England Power Association, Boston, Mass.

B. R. Bay, President, Northern Natural Gas Company, Omaha, Neb.

C. E. Bennett, President, The Manufacturers Light & Heat Co., Pittsburgh, Pa.

N. B. Bertolette, President, Hartford Gas Co., Hartford, Conn.

E. H. Bird, Vice-President, Eastern Gas & Fuel Associates, Boston, Mass.

A. F. Bridge, Vice-President, Southern Counties Gas Co. of Calif., Los Angeles, Calif.

Floyd C. Brown, Vice-President, Natural Gas Pipeline Company of America, Chicago, Ill.

J. A. Brown, Gas Engineer, The Commonwealth & Southern Corporation, New York, N. Y.

Frank L. Conrad, Executive Vice-President, The United Light and Power Company, Detroit, Mich.

Henry R. Cook, Jr., Vice-President, Consolidated Gas, Electric Light & Power Co. of Baltimore, Baltimore, Md.

H. L. Farrar, President, Coast Counties Gas & Electric Company, San Francisco, Calif.

C. E. Gallagher, President, The East Ohio Gas Company, Cleveland, Ohio.

N. Henry Gellert, President, National Public Utilities Corp., Philadelphia, Pa.

Joe H. Gill, President, Electric Power & Light Corp., New York, N. Y.

E. L. Hall, Vice-President, Portland Gas & Coke Co., Portland, Ore.

R. B. Harper, Vice-President, The Peoples Gas Light and Coke Company, Chicago, Ill.

D. P. Hartson, Operating Manager, Equitable Gas Company, Pittsburgh, Pa.

G. S. Hawley, President, The Bridgeport Gas Light Co., Bridgeport, Conn.

William A. Jones, President, Cities Service Company, New York, N. Y.

F. L. Kruesi, President, Middle West Corporation, Chicago, Ill.

Conrad N. Lauer, President, Philadelphia Gas Works Company, Philadelphia, Pa.

F. H. Lerch, Jr., President, Gas Companies, Inc., New York, N. Y.

George W. Lewis, Vice-President, American Gas & Power Company, New York, N. Y.

C. A. Lunn, Technical Director, Consolidated Edison Co. of New York, Inc., New York, N. Y.

W. Cullen Morris, Vice-President, Consolidated Edison Company of New York, Inc., New York, N. Y.

N. C. McGowen, President, United Gas Pipe Line Company, Shreveport, La.

C. E. Paige, President, The Brooklyn Union Gas Company, Brooklyn, N. Y.

A. B. Paterson, President, New Orleans Public Service Inc., New Orleans, La.

A. I. Phillips, Consulting Engineer, New York, N. Y.

Ben F. Pickard, President, Interstate Power Company, Dubuque, Iowa.

C. P. Rather, President, Southern Natural Gas Company, Birmingham, Ala.

Herman Russell, President, Rochester Gas & Electric Corp., Rochester, N. Y.

F. J. Rutledge, Vice-President, The United Gas Improvement Co., Philadelphia, Pa.

Elmer F. Schmidt, Vice-President, Lone Star Gas Company, Dallas, Texas.

N. T. Sellman, Assistant Vice-President, Consolidated Edison Company of New York, Inc., New York, N. Y.

M. L. Sperry, President, Washington Gas Light Company, Washington, D. C.

H. R. Sterrett, President, New Haven Gas Light Company, New Haven, Conn.

T. J. Strickler, Vice-President, Kansas City Gas Company, Kansas City, Mo.

Paul R. Taylor, Vice-President, Consolidated Electric & Gas Co., New York, N. Y.

E. L. White, Secy.-Treas., Laclede Gas Light Company, St. Louis, Mo.

L. J. Willien, Chief Gas Engineer, Public Utility Engineering & Service Corp., Chicago, Ill.

P. S. Young, Chairman of Executive Committee, Public Service Electric & Gas Co., Newark, N. J.

Walter C. Beckjord (Ex Officio) President, American Gas Association, New York, N. Y.

A. Gordon King (Secretary) Service Engineer, American Gas Association, New York, N. Y.



T. J. Strickler

To Members of the American Gas Association:

IN compliance with Section 2 of Article II of the by-laws of the American Gas Association, announcement is hereby made to the membership of the following report of the General Nominating Committee which will be presented to the annual convention in Atlantic City in October, 1940:

For President—T. J. Strickler, Vice-President and General Manager, Kansas City Gas Company, Kansas City, Mo.

For First Vice-President—George F. Mitchell, President, The Peoples Gas Light and Coke Co., Chicago, Ill.

For Second Vice-President—George S. Hawley, President, The Bridgeport Gas Light Company, Bridgeport, Conn.

For Treasurer—Ernest R. Acker, President, Central Hudson Gas and Electric Corp., Poughkeepsie, N. Y.

Nominating Committee Reports for 1940-1941

For Directors—2-year terms:
John W. Batten, Vice-President, Michigan Consolidated Gas Company, Detroit, Mich.

A. F. Bridge, Vice-President and General Manager, Southern Counties Gas Co., Los Angeles, Calif.

James A. Brown, Engineer in Charge of Gas Operations, The Commonwealth & Southern Corporation, New York, N. Y.

D. W. Harris, Vice-President and General Manager, Arkansas Natural Gas Corporation, Shreveport, La.

Conrad N. Lauer, President, The Philadelphia Gas Works Company, Philadelphia, Pa.

H. N. Mallon, President, Dresser Manufacturing Company, Bradford, Pa.

F. H. Payne, President, American Meter Company, Erie, Pa.

Herman Russell, President, Rochester Gas and Electric Corporation, Rochester, N. Y.

N. T. Sellman, Assistant Vice-President, Consoli-



George F. Mitchell



George S. Hawley



Ernest R. Acker

dated Edison Co. of N. Y., New York, N. Y.

Marcy L. Sperry, President, Washington Gas Light Co., Washington, D. C.

P. S. Young, Chairman of the Executive Committee, Public Service Electric and Gas Co., Newark, N. J.

Respectfully submitted,

R. L. FLETCHER,

Chairman

A. M. AMBROSE
H. C. BLACKWELL
F. M. BANKS
E. P. PREZZANO
EARL W. ROBERTS

General Nominating Committee

The following have been nominated by section nominating committees to serve as section officers for the next Association year:

Accounting Section: For Chairman—E. N. Keller, Philadelphia Electric Company, Philadelphia, Pa. For Vice-Chairman—Lyman L. Dyer, Lone Star Gas Company, Dallas, Texas.



E. N. Keller



R. J. Rutherford



H. Carl Wolf



Watson E. Derwent



Harry D. Hancock



D. P. Hartson



John W. Batten



A. F. Bridge



James A. Brown



D. W. Harris



Conrad N. Laner



H. N. Mallon



F. H. Payne



Herman Russell



N. T. Sellman



Marcy L. Sperry



P. S. Young

Commercial Section: For Chairman—R. J. Rutherford, Worcester Gas Light Company, Worcester, Mass. For Vice-Chairman—E. J. Boyer, Minneapolis Gas Light Company, Minneapolis, Minn.

Industrial Gas Section: For Chairman—H. Carl Wolf, Atlanta Gas Light Co., Atlanta, Ga. For Vice-Chairman—George F. B. Owens, The Brooklyn Union Gas Company, Brooklyn, N. Y.

Manufacturers Section: For Chairman—Watson E. Derwent, Geo. D. Roper Corporation, Rockford, Ill.

Natural Gas Section: For Chairman—Harry D. Hancock, Gas Advisers, Inc., New York, N. Y. For Vice-Chairman—J. French Robinson, The Peoples Natural Gas Company, Pittsburgh, Pa.

Publicity & Advertising: For Chairman—Charles A. Tattersall, Niagara-Hudson Power Corporation, New York, N. Y.

Technical Section: For Chairman—D. P. Hartson, Equitable Gas Company, Pittsburgh, Pa. For Vice-Chairman—Harold L. Gaidry, New Orleans Public Service Inc., New Orleans, La.

Market for Liquefied Petroleum Gases Expands in 1939

THE trend in sales of liquefied petroleum gases, which had showed some slackening in 1938, again turned sharply upward in 1939. Domestic sales of 223,580,000 gallons of liquefied petroleum gases in 1939 were reported in a survey made by the Bureau of Mines, United States Department of the Interior. The improved demand for liquefied petroleum gases in 1939 is indicated by the 35 per cent gain over the 1938 total of 165,201,000 gallons, which in turn was 17 per cent above domestic requirements in 1937. The expansion in the market in 1939 measures up to gains of 33 and 39 per cent, respectively, in 1937 and 1936.

All Uses Show Gains

All important uses of these gases showed marked advances in 1939 over 1938, with the exception of chemical manufacturing. Sales of "bottled gas," which type of gas makes it possible to employ modern kitchen equipment in rural districts beyond the city gas mains, rose over 50 per cent in 1939. Gas companies, which use liquefied petroleum gases for enriching manufactured gas or for direct distribution through their mains, increased their purchases of these gases by nearly 37 per cent in 1939.

Industrial demand, which declined in 1938 as compared with 1937, made an outstanding gain of 59 per cent in 1939, as

manufacturing activities again advanced. The spread in their use as motor fuel, especially in western areas, is evidenced by a 37 per cent increase in deliveries for this purpose in 1939. Liquefied petroleum gases required for chemical manufacturing was reported as 20 per cent below the 1938 total.

Exports of liquefied petroleum gases, which have fallen steadily since 1936, again turned upward in 1939 and the total of 1,570,000 gallons is approximately double the quantity in 1938. Distributors supplied a domestic and export demand of 225,150,000 gallons in 1939, a 36 per cent gain over the 1938 total of 166,026,000 gallons.

Domestic deliveries of liquefied petroleum gases in 1938 comprised approximately equal portions of propane, butane and propane-butane mixtures; however, in 1939, probably owing to the large increase in the demand for "bottled gas" which is predominately propane, the proportion of total sales accredited to propane increased from 33 to about 36 per cent and there was a corresponding drop in propane-butane mixtures from 34 per cent of total sales in 1938 to 31 per cent in 1939. The proportion of pentane in domestic deliveries is comparatively small; however, the percentage gained slightly in 1939 over 1938.



Housing projects such as this one at Austin, Texas, are erected with the aid of the United States Housing Authority. This project uses gas for cooking, water heating, space heating and laundry. No type of mechanical refrigeration was used

Federal Housing ... The Gas Industry's Opportunity in the USHA Program

PROBABLY no other Government building program has been of so great an interest to the gas industry as that of the United States Housing Authority. The U. S. Housing Act authorizes the USHA, a corporation of perpetual duration, to make loans up to a total of \$800,000,000 to local authorities for the construction of public housing projects and also to contract to pay annual contributions so that the rents in these public housing projects will be within the means of families from the slums.

USHA Financing

There are no grants or subsidies toward the capital costs of building USHA-assisted projects. Local projects are built entirely with local funds, not more than 90% of the capital cost being borrowed from USHA and not less than 10% of the capital cost being borrowed from sources other than the Federal Government. All these loans, Federal and local, are secured in full by all the revenues of the project and are repayable in full with interest.

After a local project is built and occupied, the USHA pays annual contributions to cover part of the difference between the rents which slum dwellers can afford to pay and the total charges necessary to cover debt retirement, operating costs, utility charges, maintenance, repairs, replacements, and payments in lieu of taxes, which total

- The American Gas Association is prepared to assist member gas companies in the preparation of their proposals in connection with USHA projects and in other ways. In addition to the Washington office, members of headquarters' staff in New York and two important committees are organized to cooperate with gas companies and the USHA.
- Mr. Bean's article tells how the Government's program is set up and how the Association may be of assistance to local companies. It is the first in a series of articles on Government activities which will appear from time to time in the MONTHLY.

By GEORGE W. BEAN

Fuel Consultant, American Gas Association, Albee Building, Washington, D. C.

charges may be called an economic rent. The rents paid by the occupants, plus the Federal and local annual contributions, cover the total charges, making up the economic rent.

In every city where a USHA project is contemplated, the rents paid by families living in slum buildings are studied by the local authority in co-operation with the USHA. Before a loan contract is signed, it is known that the rents in the projects will meet the incomes of the families who lack decent housing.

The housing erected under the USHA program is to be leased, in the words of the Housing Act, to "... families who are in the lowest income group who cannot afford to pay private enterprises in their community to build an adequate supply of decent, safe and sanitary dwellings for their use."

No loan contract and no annual contribution contract is entered into by the USHA until extensive surveys have been made of family incomes, budgets and the monthly rental paid by families in the slum areas. On the basis of these known facts, the evidence must be conclusive that those now living in the slums will be re-housed at rents they can afford.

Two Hundred and Ninety-six Projects Under Way

Of the original appropriation of \$800,000,000 for the USHA program the entire amount has been earmarked for projects. Two hundred and ninety-six projects have been negotiating for fuels. Of this number 216 have decided upon gas for cooking, and 23 are still open. Gas refrigeration will be used in 35, and 95 are undecided. Laundry plates will use gas in 183 projects, with 57 still open. In 103 projects gas will be used for water heating, and 60 are still open. Gas space heating has been specified in 97 of the 148 projects which have been decided upon.

Competition between all utilities has been very keen for this housing business, but the number of projects where gas is to be used speaks well for our efforts. This gas business has not been secured by reason of the fact that local housing authorities or anyone connected with the USHA were "gasminded." The rate negotiators of the Legal Division and the engineers of the Technical Division are all a fine body of men and have no favorite interest in any utility. The one thing uppermost in their minds is securing the best possible facility for the tenants at the lowest possible total operating cost, and unless they find that the rates and services offered by the gas company are the lowest, we do not get the business; if they are the lowest—we do, and that is the story.

There is a Bill now before Congress to appropriate an additional \$800,000,000 to continue the program. This Bill failed of passage at the last session of Congress but is up for action in the present Congress. Due to war conditions it is not believed that Congress will appropriate the full \$800,000,000, but will make a liberal amount available for the continuance of the program.

How the Program is Operated

In order that the gas industry may get its full share of this new business an effort will be made to explain in as much detail as possible how rate negotiations are conducted and to tell of the different elements that enter into

these cases before decisions are reached as to the most economical fuel to be used that will permit the operation of the project at a base room rent level fixed for that particular locality.

In order to arrive at the lowest economic utility cost, the first step necessary is to obtain rates on fuel and energy and prices on coal, oil and ice, etc. Based on these rates and prices, various combinations of utility services are analyzed and the combination which is considered practical for the particular project and lowest in economic cost is recommended by USHA to the local housing authorities.

All Factors Should Be Considered

In the making of utility analyses, it is important that sight is not lost of all of the factors which enter into, and have a bearing on, the operating expenses of the particular combination of utilities. There must be taken into consideration the debt service on the investment, together with the replacement, repairs and maintenance expense on the equipment and systems involved and the fuel and energy costs as well

as a factor on vacancy and collection losses.

It is frequently found that some one will compare one type of cooking with another purely on the basis of cost of fuel alone; this is erroneous in view of the fact that the fuel load created by a cooking installation will, when added to the load of other functions served with the same fuel result in an overall average unit cost of that fuel which is considerably less than if the cooking load were omitted. Therefore, one function often has a definite relationship to other functions and it is imperative that the utility study be considered as a whole rather than the individual functions.

The utility analyses are handled in the following manner by USHA.

- (1) The country is divided into regions and each region has a director. As early in the stage of the project as practical, the Regional Office submits to the Technical Division of the Washington Office data on the size of the project, types of buildings, etc.



This large model apartment group at Tampa, Florida, was a USHA-assisted project. It uses gas for the "four big jobs" of cooking, house heating, water heating and refrigeration. Inset is a picture of the type of slum replaced by this project



- (2) Based on these data, quantities of consumption of fuels and energies are computed and submitted to the Utility Section of the Legal Division in order that they may negotiate for rates.
- (3) After the proposals for utility services have been obtained from the utilities, this information is referred to the Technical Division of the Washington Office to prepare analyses on the various practical combinations of utilities.

- (4) The Technical Division then submits their findings to the Regional Office who in turn consults with the local authorities with respect to the final selection of utilities for the project under consideration. Frequently, at this stage, there is need for conference between the Legal Division and the Technical Division of the Washington Office, the Regional Office and the local authority with regard to considering local problems and conditions which the local authority has brought to light which often influence the selection.

Clear Understanding Necessary

It is to be remembered that the analyses prepared by the USHA are created purely as a basis on which the local housing authority will make the final selection. It is the objective of the USHA to guide the local authority in the selection of a utility combination that will bring about a project which comes within the intent of the Housing Act.

IF THE UTILITY COMPANIES CLEARLY UNDERSTOOD THE USES TO WHICH THEIR FUELS MAY BE EXTENDED, THE EFFECT THE INCLUSION OR OMISSION OF A PARTICULAR FUNCTION HAS ON THE ECONOMIC COST AND ALSO AS TO WHAT THE ANALYSIS INCLUDES, THEY WOULD BE IN A POSITION TO SUBMIT, AT THE TIME THE REPRESENTATIVE OF THE LEGAL DIVISION OF USHA CONTACTS THEM, RATES AND SERVICES THAT ARE IN KEEPING WITH THE PROGRAM. IN OTHER WORDS, THE RATES ALONE, ALTHOUGH IMPORTANT, ARE ONLY A PART OF THE TOTAL ECONOMIC COST AND IF A UTILITY COMPANY CAN BRING ABOUT A REDUCTION OF THE INITIAL COST AND/OR MAINTENANCE AND REPAIRS OF SYSTEMS OR EQUIPMENT, IT WILL MAKE THE ANALYSES UNDER CONSIDERATION THAT MUCH MORE ATTRACTIVE.

The USHA has set up the following estimated amounts as an annual maintenance and repair cost: Gas

ranges \$1.50 each, Gas refrigerators \$2.00 each, Gas hot plates \$1.00 each, domestic Gas water heaters \$1.00 each, Gas space heaters \$0.45 to \$0.75 each.

These estimates made by the USHA are based on an average annual operating expense over a period of twelve years. It is, however, possible to reduce the estimated total utility cost for a specific project if the gas company can offer to guarantee the maintenance and repair costs at some specified lower figure. In many cases, this has been done and has been the effective means by which the total gas cost was reduced below that of competitive fuels. The main interest of the USHA in this program is in the operating cost of the project.

In the natural gas territory the USHA has shown some interest in gas generating engines, particularly where it might prove economical in operation. It is, therefore, suggested that if natural gas companies are interested in this particular feature that they include in their proposals data covering such installations.

The USHA insists on the purchase of gas on a master meter basis, and in projects where there are a number of buildings in a group it has been found more economical in laying out the distribution system to install several meters. In such instances gas companies are requested to signify their willingness to combine the meter readings.

We Stand Ready to Help You

The American Gas Association has taken cognizance of the importance of the USHA program to the gas industry and has appointed two important committees to cooperate with gas companies and the USHA, furnishing gas companies with information that will be helpful to them in the preparation of their proposals and information to the USHA on their technical gas problems. Marcy L. Sperry, president of the Washington Gas Light Company, is chairman of the Committee on Housing and Realty Projects. Leon Oursouff, also of the Washington Gas Light Company, is chairman of the Working Committee serving under Mr. Sperry. John West, Jr., secretary of the Commercial Section, and C. George Segeler, engineer of utilization,

both of the A. G. A. headquarters staff in New York, have served with the Working Committee in preparing detailed instructions for the guidance of gas companies in preparing their proposals.

It is suggested that where a USHA project is contemplated, the gas company in that city request of the American Gas Association copies of the data covering such projects. Also all gas companies are requested to send to the Washington Office of the A. G. A. copies of all correspondence and proposals submitted in order that I may better represent them before the final recommendation of the USHA is made to the local authority. I am in almost daily conference with the USHA on the many gas problems confronting them.

It should be noted in closing that the USHA has no connection with the Federal Housing Administration. The FHA is interested only in guaranteeing the mortgages for private construction, and the only assistance the American Gas Association can give to the gas industry in the FHA program is urging that A. G. A. Laboratories approved appliances be made a requirement for installation.

Carbon Black Sales High in 1939

THE carbon black industry reached new peaks of production and consumption in 1939, due to the demands of the warring nations and to the recovery in rubber production, according to the Bureau of Mines, U. S. Department of the Interior.

Production was 525,166,000 pounds, 10 per cent more than in 1938; total sales were 560,533,000 pounds, an increase of 36 per cent over 1938. Exports of carbon black passed the 200-million-pound mark for the first time; domestic sales increased 47 per cent over those in 1938 and were 14 per cent above the previous peak recorded in 1936.

There were 347,270 million cubic feet of gas burned in the manufacture of carbon black in 1939, compared with 324,950 million in 1938. The average yield per thousand cubic feet rose from 1.47 pounds in 1938 to 1.51 pounds in 1939. This increase was probably due to a gain in relative importance of production by "other methods" which have much higher yields than the channel process. The average value of natural gas used was 0.94 cent per thousand cubic feet in 1939 compared with 0.89 cent in 1938.

This gas company show room became an attractive flower show when the company sponsored this popular local event



Say It With Flowers

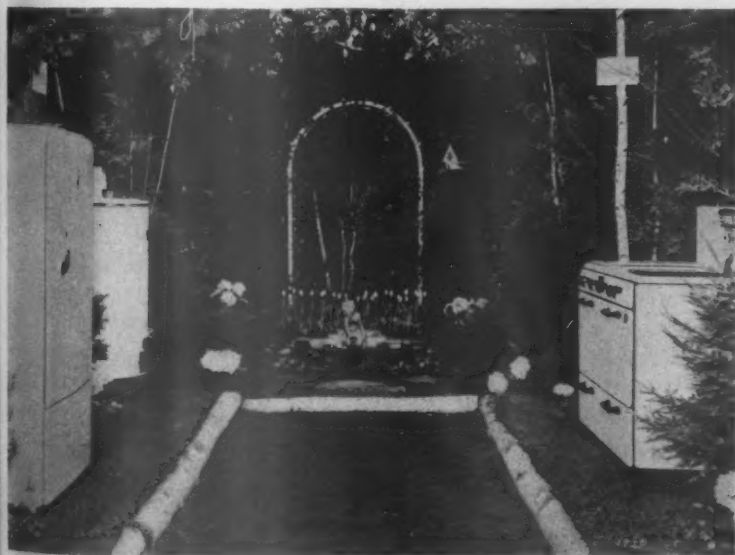
By H. S. PARKER

*Michigan Consolidated Gas Co.,
Muskegon, Mich.*

FOR some time the Muskegon District had been investigating different civic activities carried on in Muskegon with the thought that our company could sponsor some activity that would indicate the Gas Company's desire to promote worthwhile civic enterprises, and at the same time enable us to become better acquainted with

our customers. The idea of a Spring Flower Show—long wanted by Greater Muskegon florists and citizens alike—appealed to our company.

This is the second in a series of articles sponsored by the Committee on Community Development of the Commercial Section under the chairmanship of H. C. Thuerk, general manager of sales, The Utility Management Corp., New York.



Modern gas appliances in a background of flowers and shrubbery at the Spring show

Late in January of this year the Muskegon Florist Association was approached by the Gas Company with a proposal offering to supply a show room and furnish suitable prizes to the florists, together with sufficient advertising, if they would cooperate with the Gas Company in staging a spring flower show on April 12-14, 1940, as a civic venture—it being understood that neither the company nor the florists would be allowed to sell or attempt to commercialize on the flower show in any way. Quite naturally the Association responded one hundred per cent and appointed a committee to work with the company.

Most utilities realize that only a small per cent of their customers ever enter their office buildings and are not familiar with what the company has

to offer along the line of modern kitchens and home service work. The florists also feel that few people ever visit greenhouses and are not familiar with the kinds of flowers grown in their own city. By the staging of a flower show the company hoped to interest its customers in its activities and keep its merchandise uppermost in the minds of the public.

Rules and regulations governing the size and height of exhibits, cash premiums to be awarded to prize winners, and specifications covering the company's offer were prepared by the committee and mailed to all the florists in the city. Attached to this set of rules were entry blanks to be filled out and returned to the committee, so that the show could be properly staged.

Advertising by Gas Company

Advertising of the flower show was carried on by the company from ten days prior and including the second day of the show, through newspaper publications and by radio. During the show, four broadcasts a day were made direct from the show room, accompanied by music four hours each day. Small souvenirs were given away by the Gas Company to all ladies attending the show, and as mentioned before no attempt was made in any way to commercialize, either by ourselves or by the florists, during the entire show.

The company through its own employees, with the help of an outside carpenter, erected all backgrounds consisting of white birch, spruce and cedar trees, together with red willows and other wild shrubbery. Erected at intervals throughout the show room were pine trees having diameters from twelve to eighteen inches. These trees were cut to the desired height with holes drilled in the log about two feet below the ceiling height, in which were inserted branches from other trees, to give an effect of a tree in growing condition. Paths leading through the show room were made of cut stone and birch logs, the logs being six to eight inches in diameter; back of which was a strip of sod eight inches wide which formed the beginning of space that was to be filled in by the florists themselves. The paths were covered with tan bark to a depth of two inches, making a very colorful effect, besides a soft footing.

The exhibitors were divided into two classes; namely, the retailers and the growers. First, second and third prizes were awarded in both classes; while prizes for vase and basket arrangements, together with bridal bouquets and corsages, were open to all exhibitors. Each florist furnished all material and constructed his own exhibit, which consisted of continuing on from the eight inch strip of sod to the backgrounds already arranged.

The effect of the show room when completed was really unbelievable, inasmuch as there was no indication apparent to the eye that the flower show was built inside of a sales floor, home service department and storage room.

The news of the flower show spread rapidly after the first day throughout Greater Muskegon, and all during the second and third days of the show people had to stand in line from fifteen minutes to half an hour before it was possible to enter the show room. Even then many people were disappointed when the show closed on Sunday night. The company had dreamed of interesting ten thousand people in

this show for three days, but the fact that we had over thirteen thousand people proved that the entire venture was a huge success. Hundreds of comments, both written and verbal, were received by the company and individuals stating what a wonderful thing it was for the Gas Company to do as a civic movement.

The total cost of the show to the company was around \$1600.00 of which \$424.00 was spent for advertising and favors; and \$450.00 was offered as prize money to the Florists' Association. The remaining \$726.00 covered labor and miscellaneous items. There is some question as to whether all the advertising and all of the labor should be charged direct to the flower show, inasmuch as the company would have had a portion of this expense if the flower show had been eliminated.

Both our management and florists alike feel that the show was a big success, and are inclined to duplicate a similar show next spring. It is interesting to note that since the flower show our merchandise sales have been on the increase.

Financing Plan Offers Aid to Industry

A NEW plan to help New York City business and industrial concerns to modernize and to expand their plants was announced last month in full-page advertising in general, financial and foreign language newspapers in that city by the Consolidated Edison Company of New York, Inc., according to E. F. Jeffe, vice-president in charge of sales. One of the ads is shown herewith. Radio and direct-by-mail will also be used in the campaign.

The plan involves new low-cost financing on a three year basis for the purchase of gas and electric equipment needed for commercial or industrial modernization and expansion programs.

The campaign is being appropriately launched at this time to assist New York business and industry to increase production facilities and create additional jobs, Mr. Jeffe said. This is the first time that industrial and commercial establishments have been able to purchase so many types of equipment on a three year finance plan. All types of gas and electric equipment are included—such as new furnaces and ovens for improved economy and quality, new motors for increased power and efficiency, air conditioning, better lighting, etc.

Carrying a broad-gauged appeal to business, the copy reads in part as follows:

"The challenge is clear: To create jobs for men, to increase production and business facilities, to extend America's economic front and to advance the American way of life. And New York leads the way. Consolidated Edison, serving New York, offers a new, low-cost 3-year Financing Plan to assist industries and businesses, which are users of its gas and electric service, in the purchase of needed equipment."



CONSOLIDATED EDISON OFFERS A NEW PLAN TO HELP BUSINESS AND INDUSTRY MODERNIZE AND EXPAND

The challenge is clear: To create jobs for men, to increase production of business facilities, to extend America's economic front and to advance the American way of life. And New York leads the way.

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A.G.A. Sales Council . . . New Group

to Coordinate Promotional Activities

THIS Sales Council represents a new group within the American Gas Association created by a resolution of the Executive Board, and because it is a new body I believe it will be helpful to review the circumstances and conditions which have led to its creation.

The Association, through the activities of its Commercial and Industrial Sales Sections and its Committees on Advertising and Publicity, has rendered and is rendering an invaluable service to its member gas companies in aiding them in promoting the sale of gas service and gas appliances. It can, however, render its greatest service to the industry only when its sales and other activities related to sales promotion are coordinated with each other to the fullest possible extent and are based so fully upon the needs of its member companies that each company, or at least the majority, can support them and follow through on them locally with profit to itself and to the industry as a whole.

Sales Proposals Considered

In the belief that much could be accomplished in these directions, there has been a good deal of discussion among sales and other executives of the industry during the past three or four years. Proposal for changes in the set-up of the Sections and Committees of the Association having to do with sales and sales promotion activities have been considered. Some of these proposals apparently contemplated rather drastic functional reorganization which might be quite practical for an individual gas company, but have not appeared suitable for adoption by a national trade association such as our Association, whose continued success depends on the voluntary efforts and enthusiasm of all the forces in the industry working toward a common objective.

The question of the best methods of

- In order to achieve more efficient coordination of the sales and promotional activities of the Association, a Sales Council was established by the Executive Board on March 20 and held its first meeting in Chicago, Ill., on May 24 during the Executive Conference. At this meeting, the reasons for the establishment of the council and its broad objectives were outlined in a statement by President Walter C. Beckjord.
- Excerpts from President Beckjord's remarks, giving the salient features of the new organization, are presented herewith.
- The next meeting of the Sales Council will be held during the annual convention of the Association in Atlantic City, N. J., the week of October 7.

bringing about the full coordination of sales and promotional activities within the Association came up again last Fall for discussion at the first meeting of the Committee on Association Activities, under the Chairmanship of Mr. Russell. The matter was the subject of extensive discussion then and at the second meeting of the committee on March 19 by representatives of all of the groups within the Association working toward greater sales and a number of executives representing gas companies and manufacturers.

As a result of these discussions, the committee adopted a resolution recommending that the Executive Board create this Sales Council and this resolution was, in turn, adopted by the Executive Board on the following day. The resolution leaves the new Sales Council with a wide scope for decision as to the functions and activities which it should undertake. It is described in the resolution as a body for coordinating the sales and promotional activities of the Association and reporting to the Executive Board. By direction of the Executive Board, the chairmen of the Commercial and Industrial Sections, the National Advertising Com-

mittee, the Committee on Publicity and Advertising, the Chairman of the Natural Gas Section and the President of the Association of Gas Appliance and Equipment Manufacturers are appointed to serve as Vice-Chairmen of the Sales Council.

The President of the Association is assigned the duty of serving as Ex Officio Chairman of the Council and of nominating a group of executives to be elected to membership on the Council by the Executive Board.

The membership of the Council represents gas companies or systems having approximately 72% of the gas meters in the United States. Approximately 44% of the natural gas meters are represented on the Council, the remainder of the membership being from mixed or manufactured gas territory.

Council Widely Representative

Every effort has been made to insure that the Council be truly representative of the industry as a whole, and the members, in the main, are company officials or sales executives who are either responsible for or direct all company sales, advertising and related activities in the residential, commercial and industrial fields. In all probability changes will be made in the membership of the Council from year to year.

Especial attention is called to the inclusion of the chairmen of the major appliance and equipment divisions of the Association of Gas Appliance and Equipment Manufacturers as members of the Council. This is very important because our national sales promotion programs require the full cooperation and support of the manufacturers for success, and because the number and scope of these activities will be on the increase in the future. The chairmen of the various committees and sections retain their membership upon

the Executive Board so as to insure to them the opportunity of discussing their proposals directly with the Board in case this should be necessary.

While this Council has been created for the general purpose of achieving a greater and more effective coordination of all sales promotional activities, the full scope of its activities is left very largely up to the Council itself.

It might be helpful to summarize some of the reasons in the minds of those who proposed this body for the information and guidance of the offi-

cers and members of the Council in the future.

It was their feeling that responsibility and duties of the Council should include the general stimulation and coordination of the sales activities of the Association, to sponsor and recommend these activities to the industry at large and to stimulate, support and foster participation of these activities by member companies.

It was also felt that the appointment of men of broad responsibilities to membership on the Council would

eliminate the necessity of their serving on the underlying Sections and Committees of the Association with substantial economy in their time and money. Also that the Council's approval of the Association's annual programs for sales promotion would insure their more complete and prompt support by the member companies nationally and locally through their follow-up activities. To this end, it was contemplated that the Council should hold a meeting during the Executive Conference each year at which time the heads of the interested sections and committees would present, in outline form, their programs for the next Association year beginning in October.

This is desirable for several reasons. First, it will enable incoming chairmen to set up their committees and plan a preliminary outline of their activities. Second, it will afford time to transmit the proposed activities to member companies in ample season so that they may, wherever desirable, be incorporated in the programs and budgets of member companies for the ensuing year.

A. G. A. Sales Council

W. C. Beckjord, Chairman, Ex Officio, Columbia Gas & Elec. Corp., New York, N. Y.
 Davis M. DeBard, Vice-Chairman, Stone and Webster Serv. Corp., New York, N. Y.
 Elmer F. Schmidt, Vice-Chairman, Lone Star Gas Co., Dallas, Texas.
 Charles A. Tattersall, Vice-Chairman, Niagara Hudson Power Corp., New York, N. Y.
 T. J. Strickler, Vice-Chairman, Kansas City Gas Co., Kansas City, Mo.
 F. T. Rainey, Vice-Chairman, The Ohio Fuel Gas Co., Columbus, Ohio.
 Frank H. Adams, Vice-Chairman, Ass'n of Gas Appl. & Equip. Mfrs., Toledo, Ohio.
 George F. Mitchell, President, The Peoples Gas Lt. & Coke Co., Chicago, Ill.
 N. T. Sellman, Asst. Vice-President, Consolidated Edison Co. of N. Y., New York, N. Y.
 O. R. Doerr, Pacific Gas & Elec. Co., San Francisco, Cal.
 Conrad N. Lauer, President, The Philadelphia Gas Works Co., Philadelphia, Pa.
 E. J. Boothby, Vice-President and General Manager, Washington Gas Light Co., Washington, D. C.
 B. H. Gardner, Vice-President, Columbia Engineering Corp., Columbus, Ohio.
 F. M. Banks, Vice-President in Charge of Sales, Southern California Gas Co., Los Angeles, Cal.
 B. C. Adams, Vice-President and General Manager, The Gas Service Co., Kansas City, Mo.
 C. E. Gallagher, President, The East Ohio Gas Co., Cleveland, Ohio.
 Joseph Bowes, President, Oklahoma Natural Gas Co., Tulsa, Okla.
 James F. Pollard, President, Seattle Gas Co., Seattle, Wash.
 E. E. Linburg, Metropolitan Edison Co., Easton, Pa.
 R. H. Fite, Jr., Ebasco Services, Inc., New York, N. Y.
 Frank C. Smith, President, Houston Natural Gas Co., Houston, Texas.
 Harry K. Wrench, Vice-President and General Manager, Minneapolis Gas Light Co., Minneapolis, Minn.
 A. J. Gonnoud, President and General Manager, Kings County Lighting Co., Brooklyn, N. Y.
 Hugh Cuthrell, Vice-President in Charge of Sales and Advertising, The Brooklyn Union Gas Co., Brooklyn, N. Y.
 J. J. Quinn, Sales Manager, Boston Consolidated Gas Co., Boston, Mass.
 Harry C. Haroldson, The Commonwealth & Southern Corp., Jackson, Mich.
 F. B. Jones, General Sales Manager, Equitable Gas Co., Pittsburgh, Pa.
 Glen Chamberlain, Vice-President and General Manager, Michigan Consolidated Gas Co., Grand Rapids, Mich.
 V. H. Moon, Central Service Corp., Chicago, Ill.
 Christy Payne, Jr., The Peoples Natural Gas Co., Pittsburgh, Pa.
 N. H. Gellert, President, National Public Utilities Corp., Philadelphia, Pa.
 H. P. J. Steinmetz, Vice-President in Charge of Sales, Public Service Elec. & Gas Co., Newark, N. J.
 Bruno Rahn, President, Milwaukee Gas Light Co., Milwaukee, Wis.

MANUFACTURERS

(Chairmen of A.G.A.E.M. Divisions)

W. E. Derwent, Chairman, Domestic Gas Range Div., Geo. D. Roper Corp., Rockford, Ill.
 L. R. Mendelson, Chairman, Gas Water Heater Div., Hotstream Heater Co., Cleveland, Ohio.
 Louis Ruthenburg, Chairman, Gas Refrigerator Div., Servel, Inc., Evansville, Ind.
 W. L. Seelbach, Chairman, Gas House Htg. & Air Cond. Equip. Div., Forest City Foundries Co., Cleveland, Ohio.
 E. C. Adams, Chairman, Direct Htg. Equip. Div., Adams Bros. Mfg. Co., Pittsburgh, Pa.
 S. E. Little, Chairman, Hotel, Rest. & Com. Gas Equip. Div., American Stove Co., Cleveland, Ohio.
 F. J. Fieser, Chairman, Industrial Gas Equip. Div., Fieser & Lundt, Inc., New York, N. Y.

Chaplin-Fulton Co. President Dies



W. S. Ralston

WILLIAM SPENCER RALSTON, president of the Chaplin-Fulton Manufacturing Company of Pittsburgh, Pa., died on Wednesday, July 3, after an illness of six weeks, at the age of 70 years.

Mr. Ralston was born in Eldersburg, Pa., and, after preparation in Western Pennsylvania schools, attended Rensselaer Polytechnic Institute and Cornell University.

For nearly forty years Mr. Ralston had been connected with the Chaplin-Fulton Company, and more recently president of the company, of which his father, David A. Ralston, was one of the founders. He was the inventor of a number of pressure regulators and regulator improvements. He was a member of the American Gas Association, as well as of various social, civic and church organizations in and around Pittsburgh, and was well known throughout the oil and gas industries.

He is survived by his wife, Jane Glenora Ralston; a daughter, Mrs. Ford E. Carr; two grandchildren, and a sister, Mrs. William Ruess of Philadelphia.

Method of Evaluating Color Variations of Baked Food Products

By W. B. KIRK

A. G. A. Testing Laboratories,
Cleveland, Ohio

RECENT studies of domestic range performance conducted at the A. G. A. Testing Laboratories indicated the necessity for the adoption of a simple and accurate method for evaluating variations in surface color of baked vanilla cakes and cookies. A photoelectric reflectometer has been designed for this purpose and is described in this article.

Prior to this work tests to determine the baking qualities of an oven have been conducted at the Testing Laboratories for approval purposes, but acceptability of baked products, as indicated by uniformity of browning, has been judged by means of visual comparison and without reference to any sort of standard color chart. Since results of these tests were more or less qualitative in nature and were entirely dependent upon a human factor, minute variations in surface color could not be analyzed nor described accurately. Limits of acceptability of an appliance to produce generally satisfactory baking therefore could not be established.

Preliminary consideration was given to the possibility of employing standard reference color charts by which color is analyzed in three dimensional units, namely Hue, Value, and Chroma.* These units express the distinctive primary characteristic of a color (red, yellow, blue, green, or purple), lightness or darkness of a color (white to black), and strength or weakness (intensity) of a color. Analytical notations are usually expressed as HV/C. Unfortunately the only acceptable color charts available to the industry as a whole are based on this system and are not, therefore, as simple for comparison purposes as a single dimension system

would be. Several charts would be required and computations of color relationships would be slightly complicated.

Since the quantity of light reflected from any surface is a function of its color, and since reflective power may be measured directly as a percentage of the light striking the surface, this method may be employed as an accurate, although indirect, means for measuring surface color variations in units of one dimension. Consideration was therefore given to applying photoelectric cells to the problem. When equipped with proper filters, photoelectric cells react to color with char-

acteristics similar to those of the human eye, and are far more infallible in performance. Per cent reflectance results of one dimension are thus obtainable by a precise mechanical method that is extremely simple.

A survey of commercially available instruments revealed that none was ideally designed and constructed for the application intended. Although rather complicated types of photoelectric spectrophotometers are available, the operation of such devices is not suited to rapid testing work, and results are usually expressed in three dimensional units of color rather than as per cent reflectance.

Employing the type of circuit devised by Wilcox†, a simple reflectometer as pictured in Fig. 1 was designed and constructed. A schematic drawing of the cabinet, optical system and elec-

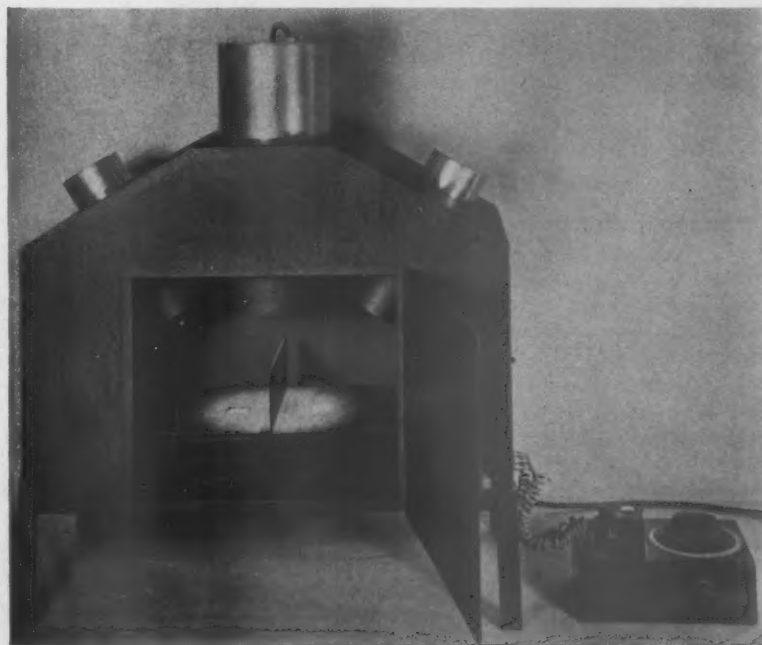


Fig. 1. New photo-electric reflectometer for measuring color variations of baked food products

*Munsell Manual of Color, by F. G. Cooper.
†Photronic Color-meter and Application to Determination of Fluoride, by L. V. Wilcox, Industrial and Engineering Chemistry, Analytical Edition, No. 6, 167-9 (1934).

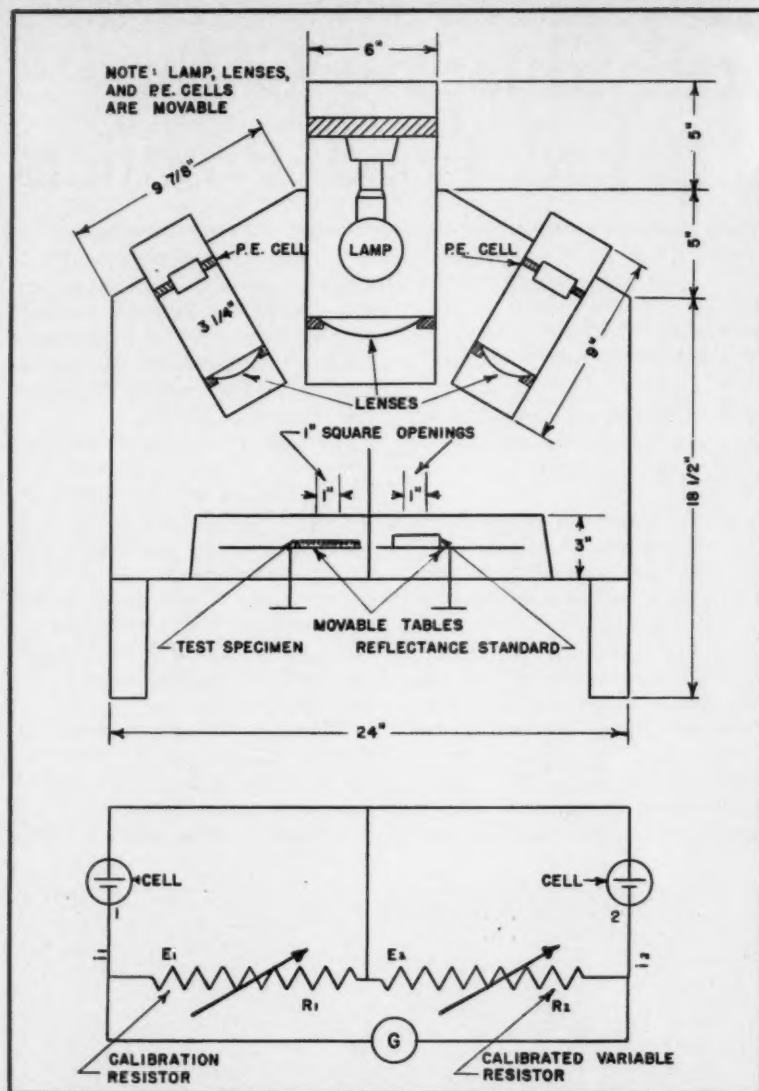


Fig. 2. Photo-electric reflectometer

trical circuit is shown in Fig. 2. Provision is made for simultaneously exposing one square inch of surface of both a test specimen (cookie or cake) and a reflectance standard (magnesium carbonate block) to a common light source. Pure white magnesium carbonate has a reflectance ranging from 96 to 99%, but is usually accepted as a reflectance standard because it is easy to keep and handle.

The instrument consists of two movable tables surmounted by light screens

lying in a common horizontal plane. A perpendicular light shield separates the tables and screens. Each screen contains a 1 in. square opening which is so located that the image of a test specimen or color standard placed underneath will be focused on the light sensitive surface of a barrier-layer cell through a condensing lens. The cells are equipped with filters which make the cell characteristics approach those of the human eye. A common light source is located vertically above both stages and is focused upon an area which includes both screen openings in such a manner that light falling on

each opening is of equal intensity. As indicated in the drawing, the light source, cells, and lenses are shielded to prevent interference from chamber reflections. Further precautions were taken by painting the chamber interior a dull black.

Current is generated in the cells by the action of light passing through the filters, much as current is generated in a thermocouple by exposure to heat. Connections between component parts of the circuit are such that these cell currents tend to oppose each other. Variable resistors are employed to balance the circuit as indicated by means of a portable galvanometer.

Current generated by barrier-layer cells of the type installed in this instrument is a linear function of illumination when the external circuit resistance is zero. As external resistances are increased this function deviates from linearity, resulting in smaller relative current outputs. This effect is particularly accentuated at greater intensities of illumination. At relatively low intensities, however, the function approaches linearity even with relatively large external resistances, and may be considered linear for practical purposes. With these limitations in mind, the instrument was designed to operate with low light intensities at the cell faces and relatively low circuit resistances so that resistance measurements could be interpreted directly in terms of light reflectance from test specimen.

That a ratio of resistances employed in balancing the circuit during observations is directly proportional to reflectance values, has been clearly and simply demonstrated by Müller's discussion of this type of circuit.† Assuming that cell 1 (See Fig. 2) is exposed to a test specimen and cell 2 is exposed to a color standard having perfect reflectance, the following treatment applies:

$$i_1 = kMI, \text{ and } E_1 = kMI \\ i_2 = kI, \text{ and } E_2 = kIR_s$$

$$\text{At balance: } E_1 = E_2 \\ \text{therefore, } kMI R_s = kIR_s \\ \text{or, } M = R_s/R_1$$

Where:

i_1, i_2 = current flowing from cells 1 and 2 respectively,

k = extinction coefficient,

M = reflectance of test specimen,

I = intensity of light source,

E_1, E_2 = voltage across resistances 1 and 2 respectively, and

R_1, R_2 = resistances 1 and 2 respectively.

† Photoelectric Methods in Analytical Chemistry, by Ralph H. Müller, Industrial and Engineering Chemistry, Analytical Edition, No. 1, 1-17 (1939).

Thus, by setting the calibrated variable resistor (R_2) at its maximum value as 100, and balancing the cells with the calibration resistor (R_1), subsequent test specimen reflectances may then be read directly from the R_2 dial.

Light source variations have no effect on the accuracy of results when the circuit is balanced. Having been sturdily constructed, the instrument may therefore be moved about with little danger of parts being thrown out of adjustment.

Standardization of the instrument is accomplished by placing a freshly scraped pure white magnesium carbonate block on the movable table on each side of the instrument and elevating the tables until the blocks are directly beneath the 1 in. square openings in the light screens. The calibrated resistor (R_2) dial (see Fig. 2) is turned to the maximum resistance setting, and this point is marked as 100% reflectance. The common light source is energized and the electric circuit is balanced by turning the knob of the

calibration resistor (R_1) until zero deflection is obtained on the galvanometer.

Minimum resistance on the R_2 dial is marked as zero per cent reflectance, and a scale of 100 equal major divisions is marked off on the dial between this setting and the 100% reflectance (maximum resistance) setting to produce the reflectance scale. This may be done since the relationship between current generated in the cell and reflected light falling upon the filter face is practically a straight line function when relatively low resistances are employed in the circuit. Consequently the resistance required in R_2 to balance the circuit, when the magnesium carbonate block under cell 1 is replaced by a cake or cookie, is also directly proportional to the current generated in the cell as demonstrated previously.

A series of experiments were conducted in which reflectance readings were compared with visual color ratings assigned to specimens by an ex-

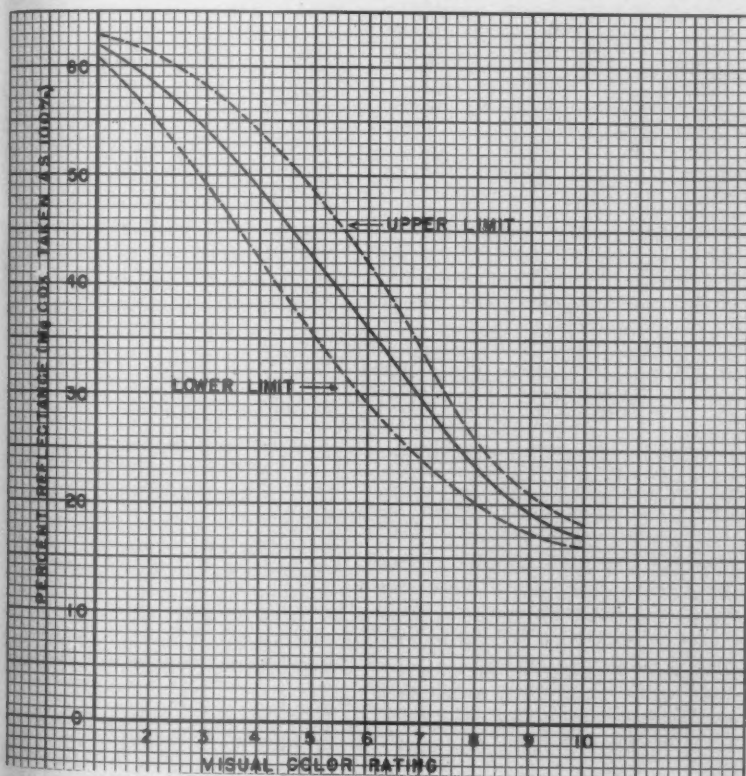


Fig. 3. Comparison of visual rating to values of reflectance as measured with the photoelectric reflectometer

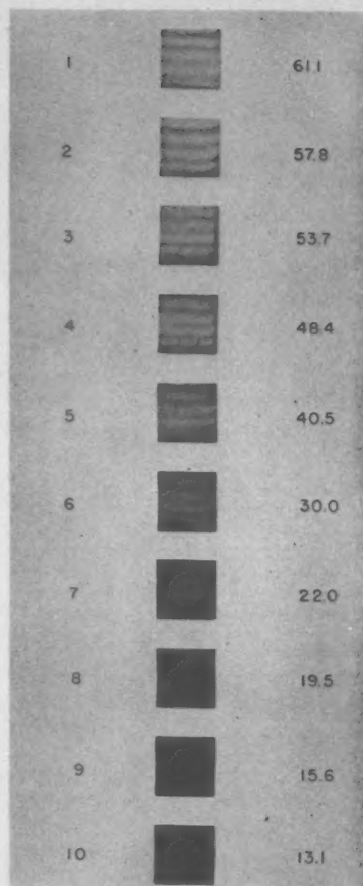


Fig. 4. Comparison of visual ratings with measured reflectance factors for vanilla cookies

perienced observer. In the early stages of this work a rough visual scale was adopted, in which a rating of 1 represented the appearance of raw dough and a rating of 10 represented the appearance of a charred product. Ideal ratings were considered to be 4, 5, or 6, which were various shades of a light golden brown. Ratings of 3, 7, or 8 were considered acceptable but rather critical. These shadings were cream-colored, tan, and light chocolate in appearance. Visual ratings were obtained according to this method under ordinary daylight conditions on several successive days, and reflectometer readings were recorded concurrently. Reflectometer readings were found to be consistent, but visual ratings were naturally subject to change, as indicated by the area included between dotted lines in Fig. 3. An average curve of

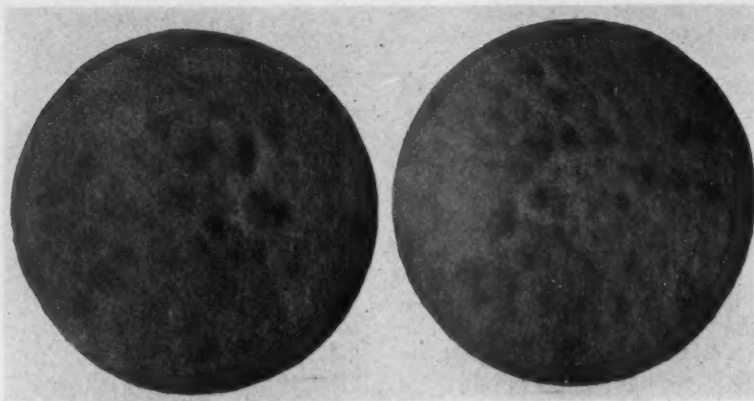


Fig. 5. Plain layer cakes baked in a modern gas range

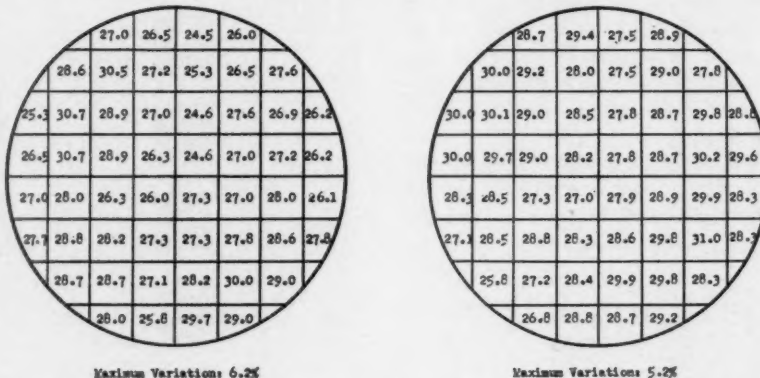


Fig. 6. Reflectance factors measured for each square inch of surface of cakes illustrated in Fig. 5

comparative values is indicated by the solid line, and illustrations of the two scales are shown in Fig. 4.

These data clearly indicate the inaccuracies to be encountered in attempting to estimate color without recourse to standard reference color charts or a standard light source. For example, three different visual ratings (5, 6, and 7) were obtained on test specimens which were then found to have a reflectance factor of 35%. It was also noted that relationships between visual ratings and reflectance factors illustrated in Fig. 4 followed the trend of the average curve in Fig. 3 but were displaced by a few per cent. These data were observed at widely different times and under different light conditions.

Under ideal conditions the solid curve in Fig. 3 should be a straight line, but deviations may be noted at the upper and lower ends of the scale. These deviations may be explained, however, by a more analytical consider-

ation of the factors involved. Whereas reflectance readings followed a straight line function, visual ratings deviated from a linear function at both ends of the scale because of human failure to evaluate color properly at the ends of the scale where perfect white and black are approached. The curve was further affected by the use of an almost perfect white reflectance standard for calibration of the reflectometer rather than the use of a raw dough color standard for 100% reflectance and a charred color for zero reflectance. If these reference points were employed, it is obvious that they would produce a slight straightening effect on the ends of the curve. The standards employed were considered preferable because of ease of duplication. This decision was influenced by the fact that little or no effect was observed in the visual range which was formerly considered as "acceptable" (ratings of from 3 to 7 inclusive).

An illustration of the type of work

in which this instrument is employed is shown in Figs. 5 and 6. Variations in the brownness of these cakes were barely perceptible to the human eye, but different numerical ratings were obtained for each square inch of surface with the reflectometer as shown in Fig. 6. These illustrations also demonstrate the uniformity in baking which the modern housewife may expect to obtain with any thermostatically controlled contemporary range bearing the A. G. A. Seal of Approval.

In summarizing the properties of this type of instrument:

1. Results are expressed in terms of per cent reflectance (units of one dimension).
2. It is easily standardized and calibrated. Measurements are made by turning a single dial, and results are reproducible.
3. Human factors are eliminated.
4. Accuracy of results depends upon low circuit resistances, stability of resistances, and sensitivity of the galvanometer.
5. Ruggedly constructed, it is portable and presents few maintenance problems.
6. No reference color standards are required other than pure white magnesium carbonate block, which is easily stored.
7. It is intended primarily for measuring color differences in terms of per cent reflectance, but if properly equipped and standardized may be employed for measuring absolute reflectance factors.

It will be seen from the discussion above that this reflectometer is a highly specialized instrument which was designed for the single purpose of providing an easy and relatively inexpensive means for obtaining reproducible measurements in comparing color variations which may be expressed as per cent reflectance in units of one dimension. It has a further advantage in that the design is simple, and parts may be readily replaced if necessary.

An instrument of this type may be used to great advantage in studying and improving range oven performance. It may also be employed for comparing color variations in other types of material.

Retort Carbon

FROM time to time the American Gas Association receives requests for information regarding sources of retort carbon. Member companies who have retort carbon on hand should communicate with the Association if they wish to dispose of it.

Mystery Chef Again On Radio Program



The Mystery Chef

THE Mystery Chef is again back on the air broadcasting twice a week over Philadelphia Station KYW for Tetley Tea. In connection with his talks he is offering his cook book, "Be An Artist at the Gas Range," for twenty-five cents a copy accompanied by the

top of one package of Tetley Tea. The Mystery Chef's broadcasts for the gas industry terminated in November, 1938. He still remains an ardent enthusiast for gas fuel and modern gas ranges, especially the CP models. His many friends in the industry wish him a full measure of success with his new sponsor.

Wins M. I. T. Fellowship



Walter Howell

A YOUNG employee of the Pacific Gas & Electric Co., San Francisco, Calif., has distinguished himself by winning, in competition with 150 others throughout the country, one of eleven fellowships awarded by the Alfred P. Sloan Foundation for twelve-month courses in the

Graduate School of Business Administration at the Massachusetts Institute of Technology in Boston. He is Walter D. Howell, industrial power engineer of the company's general sales department in San Francisco. His course runs from June 5, 1940, to June 5, 1941, and he has been given a leave of absence to cover it.

Compliments Gas Appliance Testing Program

IN a recent address to the American Management Council, a condensation of which appears in the *Readers Digest* for June, page 15, William Hard, noted Washington correspondent, makes the following complimentary references to the gas appliance testing program of the American Gas Association:

"The American Gas Association is a solid old organization, in a venerable business. Its members heard of the consumers' movement, and complaints about unreliable gas appliances. They became very busy. Through the American Standards Association they formed a special committee on gas appli-

ances with consumers among the members. "The Gas Association tested all makes of all gas appliances and has arrived at exacting standards for ranges and water heaters and some 25 other appliances. Ninety per cent of all the gas appliances sold in the United States today are sold under its label. The housewife can buy gas appliances now with assurance of reliability; her own representatives helped work out the standards."

Colored Actress Wins Milwaukee's Respect

OFFICIALS of the Milwaukee Gas Light Company now watch with more than ordinary interest the movie performances of Miss Hattie McDaniel, colored character actress who recently won the Motion Picture Academy award for the best supporting role in the film "Gone With the Wind." For Miss McDaniel has a special claim to fame in their hearts—not for her movie career, which is truly amazing, but for other more noteworthy reasons.

While she lived in Milwaukee, Miss McDaniel worked in the ladies' rest room at Sam Pick's Place on the Blue Mound Road, and when she moved away to try her luck in Hollywood, she left an unpaid gas bill. But she didn't forget. Some time later, the gas company received the following letter, dated Dec. 2, 1938, Los Angeles, Calif.:

"Gentlemen: Enclosed find money order for \$2.87 which you can see I owed for some time. I left Milwaukee because I was trying to get in the movies, which I suc-

ceeded in doing, but I wasn't able right off hand to take care of my previous obligations. So you can see by me keeping the stubs and bills my intentions were good.

"You've probably seen me in various pictures such as 'Shopworn Angel,' 'The Mad Miss Manton,' etc. I'm the colored lady that played the colored cook in 'Showboat Queenie.'"

"Trusting this will prove my sincerity and honesty, I am very truly yours, Miss Hattie McDaniel."

Miss McDaniel had overpaid her bill by \$1.11. That sum was returned with "congratulations and good luck" by the Milwaukee Gas Light Company.

Gas Appliance Testing Work Praised

IN addition to complimentary references to the American Gas Association Testing Laboratories made by William Hard, Washington correspondent, which are reported elsewhere in this issue, two other references to the Laboratories have been made recently. One was by Alice L. Edwards, formerly executive secretary of the American Home Economics Association, in her recently published book, "Product Standards and Labeling for Consumers," and the other was an illustrated article in the June issue of *Nation's Business*. The latter, which appeared on page 72, was entitled "Industry's Guaranteed Pledge."

Gas Burner Design Research Bulletin

AN important phase of research conducted during the past few years at the A. G. A. Testing Laboratories in the field of domestic gas appliances has been an investigation of fundamentals of burner design. Sponsored by the Committee on Domestic Gas Research, of which F. J. Rutledge is Chairman, this work has been carried on jointly in connection with basic research on domestic gas ranges and domestic water heaters. In view of the scope and general applicability of burner design research, it was deemed advisable to assemble this data in a separate bulletin. Entitled "Research in Fundamentals of Atmospheric Gas Burner Design," Bulletin No. 10 was published and distributed to gas company members of the American Gas Association on May 22.

Material presented in this bulletin covers primarily burners of the type commonly employed on gas ranges and gas water heaters but is in many respects applicable to atmospheric burners used on all types of domestic gas appliances. For purposes of continuity and to develop more completely the significance of experimental work, pertinent data from authoritative sources have been abstracted and included therein. Con-

siderable new data on many elements of burner design, and a complete correlation of burner design with the burning and physical characteristics of the many types of fuel gases distributed in the United States and Canada, are set forth.

Certain dimensional limits now universally accepted were shown to be in need of revision to cover more adequately requirements of modern gas-burning equipment. Among the many phases of the subject covered by this bulletin are designs for satisfactory flame characteristics, for good primary air injection, and for quiet operation. Capacity and primary air injection characteristics of orifices are also fully discussed. Ample illustrated with graphs and diagrams, this bulletin is without doubt the most comprehensive work on this subject ever assembled.

Copies of Bulletin No. 10 are available at the American Gas Association Testing Laboratories, 1032 East 62nd Street, Cleveland, Ohio. It is hoped that the information it contains will be widely employed to the best advantage in the interest of improving burners of domestic gas appliances to provide even more satisfactory service to their users.

Personal AND OTHERWISE

Executive Changes in Pacific Lighting

ELECTION of C. O. G. Miller, for 42 years president of Pacific Lighting Corporation, to the position of chairman of the board, and election of Robert W. Miller, to succeed him in the presidency, was announced June 5 after a meeting of the directors.

The position of chairman of the board has been newly created, and the position of executive vice-president, formerly held by Robert W. Miller, has been abolished.

C. O. G. Miller is one of the founders of Pacific Lighting Corporation and its predecessor company organized in 1886. He occupied the position of treasurer and director in the company until 1898, when he was elected president. Robert W. Miller has been an officer of the company since 1924, and has been executive vice-president since 1929. Under the direction of these men the companies in the Pacific Lighting group have developed into the largest intrastate natural gas utility system in the United States and now serve 930,000 customers.

Elected Secretary of New York Company



M. T. Chandler

MELVILLE T. CHANDLER has been elected secretary of Consolidated Edison Company of New York, Inc., effective July 1. He succeeds Frederick W. Jesser who retired with more than 51 years of service to his credit—the dean of all company employees in the elec-

tric side of the business.

Mr. Chandler was hired as an office boy by the United Electric Light and Power Company, one of the predecessors of Consolidated Edison Company, in 1915. He served as a clerk in the engineering department and a draftsman until he entered the war. In 1919, he returned to the engineering department and three years later became head of the statistical department. In 1930 he was made assistant secretary,

and the next year became secretary. When the United was consolidated with The New York Edison Company, he became assistant secretary of the latter company, and when that in turn was merged into Consolidated Edison in 1936, he was made assistant secretary of the new company and manager of the General Office Service Department.

Honored by Purdue



H. C. Blackwell

due in 1902.

The citation for his diploma reads as follows: "Engineer and executive whose talented energy has been devoted to the construction, operation and administration of public utilities and to the solution of the problems of human relations in industry."

HUBERT C. BLACKWELL, president of the Cincinnati Gas & Electric Company, received the honorary degree of doctor of engineering, June 9, at the sixty-sixth annual commencement exercises of Purdue University, Lafayette, Ind.

Mr. Blackwell was graduated from Pur-

Awarded College Degree for Convention Paper

O. H. MOORE, assistant superintendent of the compressor department of Lone Star Gas Co., has been awarded a professional degree in mechanical engineering by A. and M. College. The degree was conferred during June graduating exercises, which Mr. Moore attended.

Mr. Moore based his graduate thesis on the material which he and B. L. Rogers, compressor department superintendent, compiled for their A. G. A. paper presented at the Natural Gas Section's Houston convention in May. The thesis was titled, "Study of Precision Adjustment in Relation to the Care and Operation of Low Speed Four-Cycle Natural Gas Engines."

The professional degree earned by Mr. Moore is for graduates of A. and M. who conduct notable experimental work away from the school and in their particular lines of endeavor.

Boston Company Advances Reynolds and Smith

DAVID S. REYNOLDS, chief engineer of the Boston Consolidated Gas Co. since 1929, has been made vice-president in charge of engineering, manufacturing and construction, it was announced by E. M. Farnsworth, president of the company. Appointment of Thomas F. Smith, superintendent of the customers' service division, as assistant vice-president in charge of distribution was also announced.



D. S. Reynolds

Both men have had long periods of service with the gas industry in Boston. Mr. Reynolds came to the United States from England at the age of 17, and graduated from the Massachusetts Institute of Technology in 1903. In



T. F. Smith

that year he started as a draftsman with the old Bay State Gas Co. Later he became successively chief draftsman, construction engineer and manager of the house heating division of the Boston Consolidated Gas Co. In January, 1929, he was made chief engineer and in March, 1935, also assumed the duties

of assistant treasurer. Mr. Smith started in clerical work with the company in October, 1919, and advanced rapidly to become superintendent of the customers' service division in 1929.

Van Hook Appointed



H. B. Van Hook

HARRY B. VAN HOOK has been appointed eastern manager of the Security Manufacturing Co. with offices at 16911 Sweden Avenue, Detroit, according to an announcement by William T. Black, president of the company.

Mr. Van Hook gained extensive experience with the A. H. Wolff Gas Radiator Company, later the American Gas Products Corp., and again with the boiler division of American Radiator Co. Until his new appointment, he was gas specialist for the Detroit branch of American Radiator & Standard Sanitary Corp.

Prof. Kowalke Resigns as Department Head

IN order to devote all of his time to teaching and research work, Professor Otto L. Kowalke has announced his retirement on July 1 from the administrative duties and the chairmanship of the department of chemical engineering of the University of Wisconsin. Professor Kowalke has been chairman of the department for 27 years and a member of its teaching staff for 33 years.

Professor Kowalke's most recent of many valuable contributions to the gas industry was the development of a method of eliminating the deposits which accumulate in gas appliance control valves. This method was discussed at the last annual convention of the Wisconsin Utilities Association and reported in the A. G. A. MONTHLY on page 197 of the May issue. Professor Kowalke plans to continue his activity in the interest of the gas industry, and is now engaged in further study of the problem of gum deposits.

Retires After 36 Years as Chief Chemist



E. C. Uhlig

EDWARD C. UHLIG retired as chief chemist of The Brooklyn Union Gas Company on June 30 after a service of 36 years. During his entire period of service Mr. Uhlig was head of the company's Laboratory which he organized. Today the Laboratory has 40 employees. Under

Mr. Uhlig's direction it has made many important contributions, both to the company and to the gas industry as a whole.

Born in New York City, he was educated at De La Salle Institute and Cooper Union Night School, completing a course in general science and chemistry at the latter institution. He also took special courses on water purification and organic chemistry at the Polytechnic Institute of Brooklyn.

Mr. Uhlig earned his way through school by working for an importing firm. Upon graduation from Cooper Union he became a chemist with a glass company. He remained there until he joined Brooklyn Union in 1904. During the World War he was in charge of toluol production in Brooklyn Union.

He is a member of many professional and industrial organizations, including the American Gas Association, American Chemical Society, American Society for Testing Materials, American Association for the Advancement of Science, American Institute of Chemists, Society of Chemical In-

dustry of London, England, Society of Gas Lighting and the Chemists Club.

For three years Mr. Uhlig was chairman of A. G. A. Chemical Committee. His most recent of many Association activities was his chairmanship of the Steering Committee for the "Fuel-Flue Gases" Book.

Since the formation of The Brooklyn Union Gas Club in 1924 Mr. Uhlig has served as its educational vice-president. This post has brought him into contact with employees in all departments of the company. Many hundreds of persons have taken courses given under his direction.

Streuby Drumm Heads Sales Department



Streuby L. Drumm

he was employed as industrial gas salesman. Since that time he has held many responsible positions with the company including those of gas engineer and, more recently, industrial and commercial sales manager.

STREUBY L. DRUMM, for many years secretary-treasurer of the Southern Gas Association, was appointed general sales manager of the New Orleans Public Service Inc. on May 1. Mr. Drumm has been connected with the New Orleans utility since 1925 when

Wins Advertising Honor



Gussie O. Jones

FOR the first time since its establishment, a Southerner has won honorable mention in the Josephine Snapp award for outstanding work in the advertising field. She is Gussie O. Jones, advertising manager for the Atlanta Gas Light Company and its affiliated utilities.

For the past ten years, Miss Jones has been with the Atlanta Gas Light Co. and its affiliates, prior to 1939 as assistant to the public relations and advertising manager.

Winter Named President of Evans-Winter-Hebb

ARTHUR W. WINTER, formerly vice-president, succeeds the late George K. Hebb as president and general manager of Evans-Winter-Hebb, Inc., Detroit, publishers of *Today's Home* and numerous other merchandising aids familiar to the gas industry.

William F. Mason, formerly secretary and treasurer, was elected vice-president and treasurer. Chas. E. Behymer, assistant to Mr. Winter, was named secretary.

Employee Speaking Contest Winners



Pictured above are the divisional winners of the Employee Speaking Contest conducted by the Dominion-Republic group of gas companies. Winner of the finals, held in Buffalo, N. Y., June 14, was Robert L. Read, bookkeeper from Niagara Falls, N. Y. (second from right, seated). Others in the picture are, standing, left to right: C. Judd, G. Bauslangh, C. Radebaugh, R. Pendleton, F. Strebe, and R. Page. Seated, left to right: J. C. Elliott, R. Miller (honorable mention), H. Schrader, Mr. Read, and W. Elliott. Over 120 employees took part in the contests which were sponsored by S. B. Severson, vice-president and general manager. The ten finalists spoke on "How Can I Do a Better Public Relations Job"

Advertising Group Makes Better Copy Awards, Elects Officers

PUBLIC utility prize-winners in the annual Better Copy Contest of the Public Utilities Advertising Association were announced at the Association's annual convention at the Palmer House in Chicago on June 24 and June 25. E. K. Hartzell of the East Tennessee Light and Power Co., Bristol, Tenn., president of the Association, presided.

This contest is the oldest organized advertising competition in existence today. This year 16 national awards were made to 13 companies in seven states. In addition, there was regional competition prior to the national contest and regional awards were won by 46 companies in 25 states.

The list of national awards, as announced by T. H. Spain, of Newark, N. J., chairman of the Better Copy Committee, is as follows: Classification No. 1—Public Relations Newspaper Advertising—Consolidated Edison Co. of New York, Inc.—for advertisement with headline "How the Community Benefits from Consolidated Edison's Million-Dollar-A-Week Taxes." Classification No. 2—Electric Load Building Newspaper Advertising—Pacific Gas and Electric Co., San Francisco, Calif.—for newspaper advertisement with headline "You Can Plan It This Way." Classification No. 3—Electric Merchandise Newspaper Advertising—Indianapolis Power and Light Co., Indianapolis, Ind.—for advertisement with headline "Shucks—Anybody Can Cook on an Electric Range."

Other Prize-Winners

Classification No. 4—Gas Load Building Newspaper Advertising—Amarillo Gas Co., Amarillo, Texas—for advertisement with headline "Let Gas Do the 4 Big Jobs." Classification No. 5—Gas Merchandise Newspaper Advertising—Washington Gas Light Co., Washington, D. C.—for advertisement with headline "Amazing New Gas Ranges Win New Freedom for Women." Classification No. 6—Campaigns—Consolidated Edison Co. of New York, Inc.—for campaign "It's Only a Penny." Classification No. 7—Transportation Newspaper Advertising—Cincinnati Gas and Electric Co., Cincinnati, Ohio—for advertisement with headline "Going to Town With Electricity."

Classification No. 8—Employee Magazine—Niagara Hudson Power Corp.—for publication *Niagara Hudson News*. Classification No. 9—Employee Newspapers—Cincinnati Gas and Electric Co.—for publication *O-K News*. Classification No. 10—Bill Enclosures—Southern California Edison Co., Los Angeles, Calif. Classification No. 11—Direct Mail Advertising—Boston Edison Co., Boston, Mass. Classification No. 12—Special Booklets, Pamphlets, Etc.—Michigan Consolidated Gas Co., Detroit, Mich. Classification No. 13—Electric Window Displays—Consolidated Edison Co. of New York, Inc.

Classification No. 14—Gas Window Displays—Southern California Gas Co., Los Angeles, Calif. Classification No. 15—Outdoor Advertising, Consolidated Edison Co. of New York, Inc. Classification No. 16—Radio Advertising—(First) Pacific Gas and Electric Co., San Francisco, Calif. (Second) Consolidated Edison Co. of New York, Inc.

Harold J. Rowe of the Iowa Electric Light and Power Co., Cedar Rapids, Iowa, was elected president of the Association at the convention. Other officers elected are as follows: first vice-president, Al C. Joy, Pacific Gas and Electric Co., San Francisco, Calif.; second vice-president, Clara H. Zillesen, Philadelphia Electric Co.; third vice-president, Thomas H. Spain, Public Service Corp. of New Jersey; secretary, H. W. Olcott, Bozell and Jacobs, Indianapolis, Ind.; treasurer, Dale Remington, Wisconsin Public Service Corp., Green Bay, Wis.; director for one-year term, E. K. Hartzell; directors for three-year terms: Ted Ferguson, Dallas Power and Light Co., Dallas, Tex.; J. V. Macdonald, Boston Edison Co., Boston, Mass.; and How-

ard F. Weeks, Consolidated Edison Co. of New York, Inc.

The Association has published a four-page booklet containing all of the national and regional prize winning advertisements. The 1940 book is larger and contains more material than previous booklets. Copies are \$2.50 each—and can be ordered from Thomas H. Spain, c/o Public Service Electric & Gas Co., 80 Park Place, Newark, N. J.

Pennsylvania Natural Gas Men's Association

AT the annual meeting in June of the Pennsylvania Natural Gas Men's Association, all existing officers and directors were re-elected to serve until January 1, 1941. Those re-elected include W. H. Haupt, president; George Wittmer, Jr., vice-president; B. H. Smyers, Jr., secretary-treasurer, and Mark Shields, executive secretary.

The following representatives on A. G. A. Managing Committees were appointed for the same period: Accounting Section—H. D. Borger, Pittsburgh; Commercial Section—W. L. Hutcheson, Pittsburgh; Industrial Gas Section—F. B. Jones, Pittsburgh; and Technical Section—D. P. Hartson, Pittsburgh.

CONVENTION CALENDAR

AUGUST

Aug. 19-21 Appalachian Gas Measurement Short Course
University of West Virginia, Morgantown, W. Va.

SEPTEMBER

Sept. 9-13 American Chemical Society
Detroit, Mich.
16-17 Wisconsin Utilities Association, Accounting Section
Lawsonia Hotel, Green Lake, Wis.
18-20 Pacific Coast Gas Association
Hotel del Coronado, Coronado, Calif.
23-26 American Transit Association
The Greenbrier Hotel, White Sulphur Springs, W. Va.
25-27 American Trade Association Executives
Chicago, Ill.
26-27 Empire State Gas & Electric Association
Westchester Country Club, Rye, N. Y.

OCTOBER

Wk. 7 American Gas Association Annual Convention
Atlantic City, N. J.
7-11 National Safety Congress
Stevens Hotel, Chicago, Ill.
16-18 Independent Petroleum Association of America
Dallas, Texas
20-24 American Dietetic Association
Hotel Pennsylvania, New York, N. Y.

NOVEMBER

11-13 Mid-West Gas School and Conference
Iowa State College, Ames, Iowa.

DECEMBER

9-10 National Industrial Council
Waldorf-Astoria Hotel, New York, N. Y.
10-12 National Association of Railroad and Utilities Commissioners
Miami, Fla.



Accounting SECTION

F. B. FLASHER, Chairman
E. N. KELLER, Vice-Chairman

Reducing the Cost of Rewriting Meter Reading Route Sheets

By G. W. FUCHS

Philadelphia Electric Company

THE expense of preparing new meter reading route sheets is frequently overlooked until the year when the work falls due. Then, because of the lack of time, the old form is sent to the printer with minor changes in dates, and the former plan of re-writing is repeated without effecting real economies.

Everyone will agree that such a plan is wasteful. Revolutionary changes involving new uses of mechanical equipment entail extensive study, much time, and perhaps considerable expense. The industry is certainly grateful to those pioneers who will devote a part of their resources to studies involving changes in fundamental practices; but for those of us who do not have the mechanical equipment with which to experiment, the savings must be realized by less spectacular means. The following suggestions may prove of value to those companies which are contemplating the performance of a rewriting operation in the near future without the aid of mechanical equipment.

Make Searching Examination of All Recorded Data—Retain Only Essential Information

For the benefit of the companies which may not be so fortunate as to have the necessary mechanical equipment, substantial savings can be realized by a conscientious re-examination of present practices in recording information on reading route sheets. Such a re-examination should be a search to ascertain the absolute necessity of each recorded statement, number, or other information carried forward or ordinarily placed on the sheet by the meter reader.

It is not surprising to find that many notations, formerly considered indispensable, become unnecessary and even burdensome when the cost of providing the information is analyzed. Even when the extent of the essential information has been ascertained, further reductions can be effected by substituting well-understood abbreviations or even reducing the abbreviations already in use.

Conserve All Possible Space—Redesign Sheet for Longer Usage

Occasionally code numbers can be introduced to advantage. Voting blocks appro-

priately labeled on all sheets as a part of the original printing process can frequently be substituted for the use of written information to indicate conditions which require other than the regular routine handling. Even the width of the vertical columns can be reduced slightly and, if it is further possible to eliminate a single column, the useful life of a sheet may be doubled by utilizing the released space for the absolutely necessary columns of recorded data.

Each company feels that the space which it has allotted between the horizontal lines which separate one month's reading from another is exactly right and yet a comparison of the spacings used by many companies shows that spaces as small as 5/32 of an inch are frequently used and a few companies allow as much as 7/16 of an inch. Even a very slight decrease in the latter spacing will frequently increase the life of the sheet for at least two and frequently many more months. Where normally only a two year sheet is in use, the addition of two months will represent a saving of 8% in the cost of the rewriting operation.

Why Use Sheets for Multiples of Years?

It appears to be a common practice to design meter reading route sheets for a full year or a multiple of years and yet with the exception of wishing to avoid the performance of a rewriting operation during the summer months, there appears to be no good reason for avoiding sheets containing 26, 28, 32, 38, and 50, etc. months. These can represent substantial savings and should be realized.

Study Frequency of Special Billing Conditions—Modify Design Accordingly

Unfortunately, and perhaps for good reasons, Rate Departments introduce unusual conditions into rates, such as annual minimum charges, load factor guarantees, demands, demand factors; and even the Meter Departments introduce constants, demand measuring devices, compensating elements, etc., all of which force the accountant to design a record which will allow for the

proper billing of all accounts under any condition.

The number of accounts which are affected by some or all of the special conditions are, fortunately, not very numerous. Care should, therefore, be exercised in designing the new meter reading record not to penalize the rewriting operations nor the useful life of the record by making every sheet suitable for every condition. The frequency of each condition should be studied and perhaps a special form, preferably one of a distinct color, could be designed which will take care of the infrequent conditions, and permit the majority of the records to be used for many times their regular life. Perhaps a supplemental sheet to take care of the special conditions could be introduced economically and, in this manner, postpone the transfer operation beyond the customary period.

The use of rubber stamped information should be investigated. Substitutes such as voting blocks and tickler cards could be used in the Billing Department, or even a negative record might be substituted. The negative record has considerable advantage, especially when it is customary to indicate the location of the meter by rubber stamped information. It can be assumed that all meters are located in basements, and only the unusual condition can be recorded and even that could be recorded in pencil or ink.

Tickler cards have particular value where special billing conditions are involved or where sales taxes may require some accounts to be classified as tax exempt. Such tickler files have been found very useful in several companies by reducing the work of billing machine operators and avoiding the necessity of leafing all sheets in all binders to select the tax exempt accounts.

Why Use Ink?

The use of ink in the rewriting operation has been accepted without question and yet the practice in most utilities is to enter the monthly meter statements and charges, notations concerning defective meter investigations, and other important data on the sheet in pencil. This naturally raises the thought that if the rewriting can be speeded by the use of pencil, there appears to be little argument for the use of ink in transferring meter numbers and the indexes from the old to the new sheet. However, if ink is still considered preferable to pencil in the re-

Contribution of Customer Accounting Committee, E. M. Alt, chairman.

writing operation, consideration can be given to the use of fountain pens and water-proof inks. The use of colored inks may be difficult to justify.

When Auxiliary Records Are Available Why Carry Same Information on Reading Sheet?

In many companies, auxiliary office records carry the dates when meters are set and removed as well as the dates when the customer's service was turned on or off. If the customer or meter has been on system for a period of more than a year prior to the time of the rewriting operation, it appears unnecessary to carry forward such data to the new record because the few inquiries which are received concerning the date of turn-on could be better obtained from the auxiliary records than by referring to the meter reading sheet.

In those cases where five year meter test orders are involved, and especially when such orders are issued by an Accounting Department, the year of the last test must of necessity be carried forward; but even here, the year of test may be entirely satisfactory instead of the exact date of test.

Advantages of Bringing Forward Useful Prior Consumption Data

Much controversy persists concerning the necessity of transcribing consumption data for the last twelve months of use on the old record. The opponents of this plan prefer to carry forward only the last consumption shown on the old sheet and send to the Billing Department all the old meter reading route sheets for reference purposes on the regular billing days, for several months. Both methods entail some expense. Perhaps a compromise between the two extremes would be to transcribe the highest and lowest usage recorded during the last twelve months on the old sheet.

Such a record would be valuable in subsequently detecting errors which originated during the rewriting operation, and will further facilitate the rendering of estimated or averaged bills and eliminate the necessity of transporting the old binders to and from the Billing Departments during the early months of use of the new record. Gradual cease to record and other meter troubles can be detected. It should be evident that only conscientious clerks will compare the registration on the new record with the usage shown on the old sheets. In fact, except in cases of extremely high or low registration in the current month, the clerk would have no reason to question the registration. If it is customary for the clerks to compare the registration on both the old and new sheets for every account for two or more months, serious consideration should be given to a change.

If the complete comparison is not undertaken, revenue losses and customer irritation may result from incorrect billing but, of course, this must be balanced against the expense of providing the necessary data.

To eliminate the necessity of recording the month during which the highest and lowest use occurred, it might be well to consider the use of twelve blocks, each with a month printed in it so that it will only be necessary for the clerk on the rewriting operation to record the usage in the appropriate months. Opponents of this plan may argue that considerable time is consumed in selecting the high and low usage months. As a matter of fact, if the proper consumption is recorded, minor errors in selecting the lowest or even the highest month is of no grave consequence since any accurate figure gives a reasonable measure of the customer's normal sphere of operation.

Use of Standard Size Paper

Most papers used for meter reading route sheets are manufactured in standard sizes and unless care is chosen in selecting sheets which will utilize the standard paper to the greatest advantage, considerable waste may occur. Where meter reading binders are in satisfactory condition, it may be uneconomical to scrap such binders to utilize standard paper sizes to the fullest extent. On the other hand, perhaps slightly larger paper sizes can be introduced into the existing binders either for extending the life of the sheet or for providing a less crowded arrangement of an existing sheet at no additional expense.

Don't Forget the Reverse Side of the Sheet

The information which is recorded on the reverse side of meter reading route sheets deserves as much consideration as that given to the front side. Companies which make use of the reverse side of the sheet for recording data concerning sales of major appliances, credit history, results of investigations of defective meters, high bill complaints, etc. may find that appropriate abbreviations or codes can be used as a key for reference to the filled sheets to avoid the necessity of transcribing information which may have only occasional value.

Addressograph Plates

Addressograph plates can be utilized sometimes to a greater extent by recording more information which is of a somewhat fixed nature such as meter numbers, year of test, deposit data, credit classification, etc. It is possible to go too far in the recording of information on the addressograph plate in that more time might be consumed in changing the data on the plate and also making the appropriate changes on the meter reading route sheet than would be consumed in transcribing such data at the time of the rewriting operation.

Consider Condition of Binders

If meter reading binders are practically worn out and it is felt that they cannot be made to last throughout the life of the meter reading route sheet, then an excellent opportunity is afforded to study the entire situation, both with respect to paper sizes

and arrangement of data, and thus introduce every possible economy. These economies have a tendency to pyramid. For example, if greater and longer use can be made of the meter reading route sheet, less storage space is required for the filled sheets; reference to a lesser number of records is facilitated; and more history for the detection of meter troubles, tampering, credit history, etc. is provided. If sufficient economies are otherwise possible, perhaps serious consideration can be given to discarding existing binders and purchasing new ones which can provide even better facilities for reading, history, and billing.

Strength of Paper is Important When Sheet Is Designed for Long Field Usage

The choice of paper to be used for meter reading route sheets oftentimes receives little attention and the matter is left entirely to the printer. If an effort is made to obtain the cheapest type of printed form, the printer may provide paper which has a very low rag content, and failure to recognize that condition may result in sheets which are designed for long life but which cannot withstand the strains and abuse to which the paper will be subjected for that long period of time. It is recommended that where meter binder sheets are designed for use greater than three years, papers with rag content should be seriously considered.

It is astounding to see the extent to which paper strengths are increased through the introduction of new white rag. In fact, if the life of a new sheet is designed for five or six years of field use, a bond paper containing 100% new white rag is strongly recommended. The increased cost of such paper may be substantial but when compared with the savings effected by the postponement of the rewriting operation, it becomes almost negligible.

Reliable printers can supply test data on all standard papers, and a comparison of the cost of such papers will permit one to select the grade of paper which will best serve his purpose. The fold test is probably the most important test to consider. The direction of the grain in the paper should also be discussed with the printer before the paper is ordered.

Selection of Personnel

In most companies, because rewriting operations are performed at widely separated times, it is customary to use older and otherwise unsuitable employees. If no other satisfactory outlet can be found for such employees, then the rewriting operation must accept them and proceed as best it can. If a choice is possible, then great care should be exercised in selecting employees, not only for their handwriting but also to obtain employees having great accuracy and a fair degree of speed. It should be obvious that many mistakes which are made during a transfer operation may go undetected for long periods of time and frequently those which represent losses to the

company are the type which are not discovered. All errors, especially those which affect the customer, are undesirable. Wage incentive plans can also be seriously considered as a further means of introducing economy and accuracy into the work.

Continuous Plan of Rewriting Sheets

When the volume of work warrants, the use of a permanent department or group for the rewriting of sheets merits serious consideration, not only as an economy measure but also to maintain accuracy and uniformity in the finished forms.

John I. Blanchfield Is Dead at 59



J. I. Blanchfield

ASSISTANT vice-president John I. Blanchfield of The Brooklyn Union Gas Company, Brooklyn, N. Y., and a national leader in utility accounting and rate matters, died of a heart attack on June 27. He was 59 years old.

For many years, Mr. Blanchfield was active in the American Gas Association. At the time of his death he was a member of the Advisory Committee of the Accounting Section and a member of the Depreciation Accounting and Uniform Classification of Accounts Committees. He was a pioneer member of the Managing Committee of the Accounting Section and served as its chairman in 1930-31. He also served as a member of the Managing Committee of the Empire State Gas & Electric Association.

Mr. Blanchfield was a member of the Rate Structure Committee for a number of years and was considered a foremost expert on utility rates.

Born in Brooklyn, Mr. Blanchfield began his public utility career as a clerk for the Kings County Lighting Co. in 1906. Later he became auditor and assistant secretary of that company, leaving it in 1919 to join The Brooklyn Union Gas Co. as an appraisal accountant. In 1920 he became assistant auditor, in 1927 statistician of the company, and in 1934 assistant vice-president.

Mr. Blanchfield is survived by his widow, Mrs. Gertrude Breen Blanchfield, a daughter, Gertrude, and five sons, John, William, Francis, Daniel and Robert. He also leaves a brother, Magistrate James A. Blanchfield of Brooklyn, and five sisters.

Accounting Papers

VARIOUS papers presented at the Accounting Section Spring Conference in White Sulphur Springs, W. Va., April 11 and 12, are available in printed form at Association headquarters. Copies will be supplied to members at nominal cost.

LUNCHEONS!!!

Lunch
Relax
Talk
Listen
No Minutes



Be First
in Telling
The Boss
About the
New Ways to
Save Money

WHAT LUNCHEONS ??

The Luncheon Conferences of the American Gas Association Accounting Section at the Convention.

Last year over 500 attended, while in 1938 over 250 attended, and if any of those did not speak, others spoke several times. Subjects are developed and presented and frank opinions are expressed. No minutes or other records are kept, consequently real facts are told and actual experiences are described. Members present their problems and learn what to do,—and what not to do.

The Accounting Section Luncheon Conferences are outstanding features of the Convention. And again this year, luncheon conferences, with discussion leaders who thoroughly understand their subjects, will be held. Promise yourself to come this year to tell what you are doing and to hear how others are coping with the same problem.

The Convention will be held

THE WEEK OF OCTOBER 7, IN ATLANTIC CITY, N. J.



Commercial SECTION

DAVID M. DEBARD, Chairman

R. J. RUTHERFORD, Vice-Chairman

J. W. WEST, Jr., Secretary

The Shortest Way to Sales

How a Customer Survey Co-ordinates Advertising and Selling for a Straight Line Drive on the Best Prospects for Domestic Gas Equipment



W. L. Jones

SELLING domestic gas equipment is basically a matter of establishing contact between the gas company at one point and the prospect at another point. And here, as in geometry, the shortest distance between two points is a straight line.

In our case the straight lines for co-ordinated advertising and selling have been established by a detailed customer survey, conscientiously kept up to date.

Before describing this survey more fully, I would like to make clear that such a survey by itself is of little help. Unless an intelligent program is developed for utilizing the survey information, the expense and trouble of making the survey might as well be saved.

Our experience has been, that having discovered good prospects by means of a customer survey, it is wise to send them one or more pieces of good direct advertising in advance of our salesman's call. It is often advisable, too, to follow up the salesman's call with direct mail.

This procedure, we have found, turns a much higher proportion of prospects into buyers, than when the salesman is not so supported.

Prospects Must Be Cultivated

Even so, such co-ordination of intensive advertising and selling, converts only a comparatively small proportion of prospects into buyers. The great majority of prospects, even though they definitely need certain gas equipment, require quite a long period before deciding to buy.

How to cultivate these good prospects during this difficult "incubation period" was one of our biggest problems.

Intensified effort was not the answer. The salesman who calls too often wears out his welcome. This is also true of direct mail. What we wanted was some medium that would be welcomed by prospects even after repeated calls, a medium that would skillfully promote the desire for gas equipment,

By W. L. JONES

Sales Manager, The St. Louis County Gas Company, Webster Groves, Mo.

head off competition, and pave the way for more intensive advertising and selling at the proper time.

We found this medium in a magazine known as *Today's Home*. After using it for a year, we have renewed our contract for another year. This magazine is now the foundation of the co-ordinated program by which we follow up the prospects revealed by our customer survey.

Making a Customer Survey

The initial information for a detailed customer survey, in which the information for every customer is to be separately recorded, can be made by a special survey crew, by meter readers, or by any other group having

access to the customers' premises. In our case we secure the information in connection with a meter and governor inventory made by our engineering department. A check list was printed on the back of the inventory sheet and our men while securing inventory information also checked the information desired by the sales department. No attempt at that time was made to interview the customer. As a result the information secured was somewhat limited but still quite valuable.

Surveys of this kind often become useless almost as soon as they are completed. In our case, however, it was decided that the information should be kept up to date and available for daily use. To accomplish this we adopted special record cards which could be mechanically tabulated whenever information was needed. Several systems on the market accomplish this end. The one we adopted, although much less elaborate than some, serves the purpose very well.



Today's Home maintains systematic contact with prospects revealed by the company's customer survey. It furnishes a foundation for intensive direct advertising and follow-up calls by salesmen

As soon as the customer information was punched into the record card a complete analysis was made. This summary gave results by districts, by home valuation, and according to various other break-downs which might be of value in appraising needed sales activities.

Specialty Selling Crews

Our outside specialty selling crews were divided into four groups, specializing on water heaters, ranges, refrigerators, and heating equipment. Each crew completely covered the company's territory and proper provision was made for the transfer of leads from one specialty group to another. The secret, however, of the successful operation of these specialty crews lay in our ability to have each group specialize in canvassing customers who were most likely to be interested in their specialty.

All sales work cannot be reduced to machine precision but the scheduling of the canvassing done by these specialty groups has been reduced to this machine precision. Each salesman starts with fifty canvass cards and must, each week, turn in thirty-six cards in return for thirty-six new ones which have been mechanically selected in his territory on the appliance which he specializes in.

Range salesmen are directed to homes where poor gas ranges have been reported in service; water heater salesmen to homes not already equipped with automatic water heating equipment; refrigerator salesmen to homes that either have no refrigerators or have a mechanical refrigerator that is not in good condition; heating salesmen to homes having oil burners, stokers, and automatic water heating equipment. The obvious assignment has not always been found the best. Therefore, in addition to these assignments, various other selections are used to route the salesmen to the desired market.

Analysis of the market to determine just what class of customer each group should work on has been most interesting. It shows that the acceptance of the automatic gas water heater is almost identical in every price class with the acceptance of automatic heating. Some similarity of appeal seems to exist in these two services. Thus where one service is used without the other, that is the place for our salesman to be working.

The mechanics of our canvass card system make it easy for clerks to get out cards as each sales group requires them. No visible inspection of the cards is required. They are simply sorted mechanically until the desired number are obtained for each salesman requiring cards that day.

A customer survey may quickly become obsolete unless some means is provided to keep it up to date. Accordingly, our salesmen, during their calls, check the cards, not only as to information concerning their specialty, but on all other points as well. If the card is found to be inaccurate in any respect, it is marked for correction and re-punched before being returned to file. All cards are put back into the file mechanically



These pages are typical of the material which The St. Louis County Gas Company includes in its editions of *Today's Home* to adapt it closely to local conditions

and reach their proper file position without visible attention.

Advertising Paves Way for Salesmen

The advertising man will recognize the foregoing as a "natural" for effective direct by mail advertising. Since the canvass calls are routed with machine precision ahead of salesmen, it is a simple matter to withdraw these cards two weeks in advance of schedule assignment dates and mail to each customer appropriate direct by mail advertising so that one, two, or three pieces may be received by each customer. Cooking and range literature goes ahead of the range salesman; refrigerator literature ahead of the refrigerator salesman; water heating literature ahead of the water heating salesman; and heating literature ahead of the heating salesman. Various modifications are, of course, possible and many companies will see the merit of modifying this schedule so that one or more mailing pieces reaches the customer after the salesman's canvass call. Direct mail when used in this way should be of high quality.

Our prospects not only receive this intensive advertising but also our magazine, *Today's Home*, which is ideally suited for the vital work of maintaining contact with

prospects without arousing irritation by constant high pressure.

Since this magazine is comparable to the finest newsstand magazines, prospects do not regard it as advertising. They welcome it to their homes and read it with a thoroughness seldom accorded to outright sales literature.

We use up to four pages in each issue for advertising and local editorial features such as articles about home heating illustrated by pictures of typical customers' homes. Prudence Price, our Home Service Director has contributed a number of articles offering helpful information to local homemakers. As every issue is free from competitive advertising, and editorial matter unrelated to homemaking, our messages receive the reader's undivided attention.

To all these advantages is added the basic one of systematic production and distribution. Too many advertising programs started with great enthusiasm quickly fade away. But *Today's Home* keeps up its tactful pressure all year around.

Analyzing Losses

The value of our co-ordinated system is illustrated by a recent analysis to determine whether our range salesmen were being di-

rected in proper channels for most productive results.

The survey cards of customers who had replaced a gas range with a competitive service were studied to determine what type of customer was most likely to make such a replacement. The following table summarizes the analysis:

<i>Canvass Card Classification</i>	<i>Homes in This Study</i>	<i>No. of gas Ranges Replaced</i>	<i>Replacements per 1000 Customers During This Period</i>
Gas Ranges in good condition	13,254	23	1.7
Gas Ranges in fair condition	10,983	52	4.7
Gas Ranges in poor condition	4,881	31	6.3

This information was tabulated and available within three hours after the list of names had been prepared. Inspection of this table leads to the conclusion that a specialty range salesman can sell more gas ranges by calling on the 4881 customers who have poor gas ranges than by calling on all of the 13,254 who have good gas ranges. It was found that the value of the home had little to do with these gas range replacements. With the system as outlined every possibility, however remote, can be explored and it is surprising how some of the remote possibilities give excellent

clues to where the sales force should be devoting their efforts.

Costs

The cost of setting up the initial survey card system depends on the system employed. If the work can be done by some

group having access to the customers' premises on other business, the additional time required can be held to one or two minutes per call. Cards must be purchased and clerical expense included for transferring the information to them. Some clerical work is involved in keeping the system up to date. With approximately 40,000 cards in file, this has required the services of one file clerk. We feel, however, that the cost has been more than offset by the saving in advertising expense and the saving resulting from directing salesmen to the proper market.

Total Number of Single Family Residences Covered by the Initial Survey

<i>Estimated Value, including ground</i>	<i>Number</i>	<i>% of Total</i>
\$ 3,000 or less	10,213	28.5
5,000	13,904	38.8
7,500	5,587	15.5
10,000 and up	6,193	17.2
	35,897	100.0
Unknown	3,208	
	39,105	

Per Cent Saturation in Single Family Residences of Various Values

	<i>3,000</i>	<i>5,000</i>	<i>7,500</i>	<i>10,000 and up</i>	<i>All Values</i>
Heating:					
Gas	.5	4.0	17.1	41.2	12.7
Oil	.9	4.8	18.6	39.9	12.2
Stoker	1.5	6.0	9.2	4.1	4.9
Others	97.1	85.1	55.1	14.8	70.2
Water Heating:					
Gas—Automatic	3.3	10.2	34.4	77.3	24.5
Gas—Conversion	2.3	6.1	7.9	3.8	5.0
Gas—Tank	37.1	58.6	46.7	13.6	43.0
Oil	0	0	.3	1.2	.3
Coal	1.6	1.2	1.3	1.3	1.3
Furnace Coil only	37.8	21.5	8.4	2.3	20.0
Electric	.1	.2	.3	.2	.2
None	17.8	2.2	.7	.3	5.7
Cooking:					
Gas	96.0	94.6	91.0	89.6	93.4
Electric	2.0	4.7	8.2	10.1	5.4
Oil	.7	.2	.3	.1	.4
Coal	1.0	.2	.2	.1	.5
None	.3	.3	.3	.1	.3
Refrigeration:					
Gas	1.2	1.7	1.7	1.5	1.5
Electric	68.8	87.0	91.9	95.1	84.2
Ice	27.6	9.6	5.6	3.2	12.8
None	2.4	1.7	.8	.2	1.5

Fall-Winter CP Campaign Plans Announced

At a recent meeting of the Interim Committee of the A. G. A. Domestic Gas Range Committee, plans were discussed for the CP Fall-Winter campaign, the production of which is now well under way.

The theme of the CP Fall-Winter campaign to gas companies and dealers will be "American Homemakers Speak," tying in with the A. G. A. national advertising theme for the coming year of "3 out of 4 choose modern gas cooking."

The campaign portfolio will carry statements from industry leaders, and actual "case histories" of outstanding successes made by retail sales outlets in the promotion of CP gas ranges. A new, unique and individualized training plan for retail gas range salesmen will be another feature of the campaign.

The mailing will offer sales ideas, sales tools and sales helps for application during any one or all of the months of August, September, October, November and December.

Ranger Club Awards to Home Service

In reward for the effective cooperation of Home Service Departments in CP range promotion, the A. G. A. Domestic Range Committee has extended the awards of the CP Ranger Club to include home service directors and their assistants.

This award will be an attractive pin which will be given to the Home Service personnel of companies registered in the CP Ranger Club upon meeting the following requirements:

1. Home service directors and their assistants who make twelve or more presentations during 1940 in which they tell the CP story and use Certified Performance Gas Ranges for the demonstration.
2. Home service directors and their assistants will be awarded CP pins when their sales manager earns his CP Ranger emblem by 50% or more of his salesmen qualifying as CP Rangers.

Large CP Range Sales in Spring Campaign

THE "CP Parade—Spring Gas Range Sale," conducted by the Dominion-Public group of gas companies, Buffalo, N. Y., from April 1 to June 15, was highly successful according to George L. Scofield, new business manager and chairman of the A. G. A. Domestic Range Committee. This 11-week campaign resulted in the sale of 1053 gas ranges of which 63.3 per cent were CP models. In a similar activity last year only 37 per cent of the sales were CP models, indicating a sharp rise in popularity of these high quality gas ranges.

National Campaign Spurs Gas Refrigerator Sales

SALES of gas refrigerators during April and May of this year by leading utilities showed a sharp increase over the same months a year ago, it was announced by Bernard T. Franck, chairman of the A. G. A. Refrigeration Committee, which is conducting an all-year-round nation-wide gas refrigerator selling campaign.

An example of the value of the strong competition between the several hundred companies registered in the campaign is the fact that among the 24 company winners in June, there are thirteen companies that have not hitherto appeared in the list of winners.

During the remaining months before the first year-round gas refrigeration drive closes, gas companies all over the country will have not only the opportunity to increase their earnings and build up good will through dependable economical service, but they also put themselves in positions to win one of the flights to Bermuda aboard a Pan American clipper ship. Flight winners will be announced at the annual convention of the American Gas Association to be held next October in Atlantic City, N. J.

The 24 companies which were winners in their respective divisions for May are:

Greatest Number of Installations per 10,000 Meters:

- Division 1—Southern Counties Gas Company, Los Angeles, Calif.,
- Division 2—Binghamton Gas Company, Birmingham, Ala.,
- Division 3—Alexandria Gas Company, Alexandria, Va.,
- Division 4—Mobile Gas Service Corp., Mobile, Ala., and in
- Division 5—Macon Gas Company, Macon, Ga.

Greatest Total Installations Reported:

- Division 1—The Brooklyn Union Gas Company, Brooklyn, N. Y.,
- Division 2—Milwaukee Gas Light Company, Milwaukee, Wis.,
- Division 3—Atlantic City Gas Company, Atlantic City, N. J.,
- Division 4—The Ohio Fuel Gas Company, Columbus, Ohio,
- Division 5—Alabama Gas Company, Montgomery, Ala., and in
- Division 6—Alabama Gas Company, Anniston, Ala.

Greatest Per Cent of Increase in Installations over 1939:

- Division 1—Southern Counties Gas Co., Los Angeles, Calif.,
- Division 2—Public Service Electric & Gas Co., Trenton, N. J.,
- Division 3—Binghamton Gas Works, Endicott District, Binghamton, N. Y.,
- Division 4—Equitable Gas Company, Pittsburgh, Pa.,
- Division 5—Southwest Natural Gas Co. (So. Texas Dist.) Lockhart, Texas, and

- Division 6—Citizens Gas Fuel Company, Adrian, Mich.

Greatest per cent of replacements of out-moded automatic refrigerators against total installations reported: (First Five Divisions Eligible Only)

- Division 1—Peoples Gas Light & Coke Co., Chicago, Ill.,
- Division 2—The Laclede Gas Light Co., St. Louis, Mo.,

- Division 3—New York State Electric & Gas Corp., Auburn, N. Y.,
- Division 4—The East Ohio Gas Company, Youngstown, Ohio, and in
- Division 5—Southwest Natural Gas Co. (So. Texas Dist.) Lockhart, Texas.

Greatest number of individual retail installations sold at the prevailing retail prices and under the policies of each company, the Southern California Gas Company, Los Angeles, Calif., is the winner in Division 1, the only division eligible for this award.

Greatest number of installations per 1,000 meters (limited to the sixth division), Georgia Public Utilities Co., Aiken, So. Carolina, is the winner.

Final Drive in Gas Refrigerator Campaign Gets Under Way

THE final phase of the first year-round gas refrigerator selling campaign conducted by the A. G. A. Refrigeration Committee got under way July 1 and will end September 25. Announcement of the drive which will be known as "New Horizons" campaign and the awards that are offered to participating salesmen, was made by Bernard T. Franck, chairman of the Refrigeration Committee.

A portfolio distributed to the several hundred participating companies containing complete information regarding the terms of the campaign carries a preface by Walter C. Beckjord, president of the A. G. A., Davis M. DeBard, chairman of the Commercial Section, and Mr. Franck, in which these leaders stress the importance of the campaign to the gas industry.

Focal points for sales attack during the campaign are outlined in the booklet as the replacement, new-user, apartment house and new building markets. The booklet goes on to explain the various awards which will be given to the winning participating companies and winning salesmen, all awards to be announced at the annual American Gas Association convention next October at Atlantic City, N. J.

The winning company in each of the 24 classifications will receive an Honor Certificate for quarterly achievement during the period of July, August and September.

Each of the 24 companies winning the Annual Best Performance Award for its respective classification will also receive a handsome plaque as a memento of its outstanding sales record during the campaign.

The six salesmen who win a Bermuda flight for leading their respective divisions in sales for the three-month period, April, May and June, will also be announced at the convention. All 30 sales pilots will leave for Bermuda shortly after the convention closes aboard a Pan American clipper ship.

As a result of the enthusiastic response

to the original bonus plan for salesmen, introduced during the January to March quarter, this plan is again offered during the third campaign with increased bonuses.

Sales winners in July will get their regular awards. Winners in August, who have qualified by making five refrigerator sales in the previous month are eligible for a bonus representing 25 per cent of the cash August award.

Winners in September will receive a bonus equal to 25 per cent of their September award if they have qualified in either July or August, and 35 per cent if they have qualified in both months.

Clipper Model Is Gas Sales Trophy



This gleaming model—a replica of a Pan American clipper—is one of twenty-four trophies presented to the gas utilities that turned in outstanding sales accomplishments during the second quarter period of April, May and June in the 1940 nation-wide gas refrigeration selling campaign conducted by the American Gas Association Refrigeration Committee. The trophies measure 24 inches across the wing span and are exact, drawn-to-scale reproductions of the Pan American clippers that fly from La Guardia Field in New York City to Lisbon



Industrial Gas SECTION

F. T. RAINEY, Chairman
H. CARL WOLF, Vice-Chairman
E. D. MILENER, Secretary

Commercial Sales Conference in Atlanta Features New "Set of Tools" for Gas



Speaker's table at Thursday Luncheon (left to right): E. L. Stauffer, Charleston, S. C.; Hale A. Clark, Detroit; Charles W. Gale, Knoxville, Tenn.; Eugene J. Stern, Georgia Public Utilities Co., speaker; Franklin T. Rainey, Chairman Industrial Gas Section, Columbus, Ohio; Eugene D. Milener, Secretary, Industrial Gas Section, New York; H. Carl Wolf, Vice-Chairman, Industrial Gas Section, Atlanta; Charles C. Kraus, Baltimore; Robert J. Wilson, National Restaurant Assoc., Washington; John F. Mooney, New York

NEVER before has the gas industry had so much to offer to the commercial establishment—and if you don't believe it you should have attended the 1940 Hotel, Restaurant and Commercial Gas Sales Conference, sponsored by the Industrial Gas Section in Atlanta, Georgia, May 30 and 31. In connection with the meeting, and discussed from the floor by several speakers, was the most impressive display to date confined exclusively to modern small gas appliances for commercial uses—for kitchen and counter cooking, for coffee making, for 180° water heating, for dishwashing and sterilization, for refrigeration, for permanent waving, etc.

20 Manufacturers Show Products

Twenty different manufacturers had each supplied one or two of their newest and most ingenious units for making the commercial enterpriser's life easier and more profitable—and it was apparent that the years of agitation for better small gas appliances for business purposes, which have characterized A. G. A. Hotel, Restaurant and Commercial Gas Sales Conferences since their beginning in 1933, had brought results—that non-residential gas sales departments now have a most professional

"kit-of-tools" with which to build high-rate, good-load-factor, big-volume commercial gas loads.

Much interest was evidenced in the display of equipment as it was arranged in the colonnade bordering the meeting hall at the Atlanta Biltmore Hotel. Small groups clustered about the various pieces of equipment almost constantly during the two-day event. But to consolidate the Conference's evaluation of each unit, and to bring out the sales points of each piece of equipment, a grand "Parade of Stars" among small commercial appliances, staged on Friday afternoon, brought individual tables of interesting new units in the same classification across the stage and under the spotlight, where Harry A. Sutton, Newark, N. J., Arthur M. Apmann, Derby, Conn., E. V. Fineran, Washington, D. C., and Charles W. Gale, Knoxville, Tenn., held extemporaneous discussions emphasizing the merit of each unit from the gas utility salesman's point of view. Specially considered in this Parade were groups of: (1) deep fat fryers, (2) counter griddles, (3) broiling-grilling combinations, (4) latest-type urns and coffee makers, (5) warming cabinets, (6) dry steam tables, (7) continuous and pop-up toasters, (8) hot dog

warmers, oyster stewers, and other specialties, and (9) batch sterilizers. By way of introduction to this demonstration, a prepared round-table discussion led by Mr. Apmann aired the viewpoints of different companies in regard to special phases of marketing technique and dealer cooperation.

News on the Sterilization (180° Water) Front

Another symposium—"Selling Points for Volume Water Heating," involving the matter of 180° water supplies for dishwashing and sterilization—featured the first day of the Conference. W. H. Ligon, Atlanta, emphasized the desirable load characteristics of water heating business, noting that its hour-to-hour as well as its month-to-month fluctuation is minimal and can, to some degree, be controlled to balance other peak-and-valley influences. Analyzing a representative Southern city, he demonstrated that there were several hundred undeveloped prospects for commercial water heating service, and showed that they might fall into as many as 20 or 30 different classifications. His conclusion was that this phase of the commercial gas load, despite its desirability and salability, has not yet been favored with the sales aggressiveness which it merits.

A. V. Leudemann, New York, representing the Volume Water Heating Committee



An air-cooled commercial gas refrigerating unit of 400 pounds I.M.E. capacity was announced by George S. Jones, Jr., vice-president and general sales manager, Serval, Inc., Evansville, Ind.

of the Industrial Gas Section, distributed the new report of that Committee on "180° Water Heating at N. Y. World's Fair"; and reviewed its contents to demonstrate that many new techniques for dishwashing and sterilizing-water production have been devised on the Fair Grounds. Some of these methods were described, and the commercial gas sales fraternity was urged carefully to study the report so that its knowledge of modern sterilization technique will not be outdated as the trend toward more stringent municipal enforcement of sanitization laws gathers speed.

Final contributor to the Water Heating Symposium was Walter G. Groth, Toledo, who described the *modus operandi* of the one-year-old booster-recovery system by which a single appliance can supply both large quantities of stored 140° water for general utility, as well as adequate quantities of 180° water for the operation of sterilization or dishwashing apparatus. Aside from the flexibility of such hook-ups, extra virtues lie in the fact that there is no temperature-stratification in storage tanks, and smaller storage tanks can be used than with traditional storage systems wherein gravity rather than a pump is relied upon for recirculation. Mr. Groth urged that our energies be applied to sales of new installations rather than wasted in boasting about jobs in the emergency breakdown replacement classification.



For future cooperation between the gas industry and the nation's restaurateurs, Robert J. Wilson, field secretary, National Restaurant Association, details his Association's activities

Commercial Cooking Moving from Kitchen to Counter

Eugene J. Stern, vice-president, Georgia Public Utilities Company, dared the indictment that "a great proportion of commercial cooking business has been moving from the kitchen to the counter while we have been focussing our main attention on the volume business in the kitchen—with the result that, although single voices and single-handed action have attempted to follow the trend, as an industry we have not really turned a hand to get this business."

Mr. Stern feels that our market surveys have been inadequate, and asked for a show

of hands to prove how few non-residential sales departments really know how many small and counter commercial appliances are on their lines and how many similar competitive units are in their territories. Said he, "No one in the industry knows exactly how big this field really is—but it is certainly enormous."

Management has been responsible for whatever neglect we have suffered in this field, he opined, but it's the job of non-residential sales managers and their departments to reverse this neglect of management, to obtain executive support for thoroughgoing sales planning in this quarter, and to endorse campaigns designed to make the type of small commercial and counter appliance sale that acts as a constant advertisement of what we have to offer



Eugene J. Stern, vice-president, Georgia Public Utilities Co., warns against letting our commercial cooking sales program get out of step with purveying trends

and a stimulus to further business in this bracket.

Friday's luncheon speaker, Mark Wooding, proprietor, Wooding's Restaurant, Atlanta (fully gas equipped!), proved that a customer can entertain as well as talk business. A memory expert of some distinction, Mr. Wooding undertook to memorize the nature, illustration, and headline text on every single page of a complete issue of a popular five-cent magazine, and prove it to any "doubting Thomas" in the audience. His mastery of number sequences extending into the hundreds kept Chairman Rainey busy at the blackboard and the audience guessing.

Thumbnail abstracts of the formal papers presented at the two-day Conference follow. Duplicated copies may be obtained by addressing Industrial Gas Section, American Gas Association, 420 Lexington Ave., New York, N. Y.

"How We Sell Commercial Space Heating," E. L. Stauffer, Charleston, S. C.

Outlining his company's success in capturing space heating load since 1935, Mr. Stauffer covered matters of: specialized rates, market survey, promotional assistance, servicing, planned development of sales techniques, and executive support. "The emphasis was on selling—the engineering being merely a means to an end," said he.

Refreshing thoughts involved: (1) sales-



Among the Southern executives attending the Conference (left to right): L. O. Gordon, president, Peoples Water & Gas Co., Chattanooga, Tenn.; Alva F. Traver, vice-president, Jacksonville Gas Co., Jacksonville, Fla.; and H. Carl Wolf, president, Atlanta Gas Light Co., Atlanta, Ga.

men's use of neatly bound photographic manuals showing every installation made to date, accompanied with before-and-after experience with regard to both cost and temperature control wherever possible; (2) the lost motion saved by carefully checking prospect's credit before completing any sale; (3) success in selling by mail to chain stores whose corporate headquarters are located in a distant city; and (4) active enlistment of architect and plumber cooperation.

"Planning Commercial Kitchens and Keeping Them Modern," John F. Mooney, Orlando, Florida

A commercial kitchen planning kit (consisting of scale miniatures of all manner of apparatus used in volume food preparation) was moved like a chess set by Mr. Mooney on a representative hotel floor plan, to demonstrate that "kitchen planning is principally a traffic problem." However, according to the speaker, the kitchen layout man must know every detail of the chef's, the baker's, the dishwasher's and all other kitchen workers' problems.

Helpful thoughts, such as keeping heat-generating units away from refrigerating elements, recognizing the professional jealousies between bakers and chefs, and trying to arrange for a minimum of four to ten square feet of kitchen space for each person seated, were offered. He urged that salesmen's approaches should be "through the back door into the kitchen rather than through the front office," that every attempt be made to arrange for kitchen planning and appliance specifications before architects' plans for new hotels and restaurants are complete, and that commercial gas sales departments bend every effort to help their allies, the kitchen equipment houses.

Extremely active discussion followed Mr. Mooney's paper, and brought out diametrical viewpoints with regard to how far utilities should proceed in undertaking kitchen layout functions.

"The Partnership Between Restaurants and the Gas Industry," Robert J. Wilson, Washington, D. C.

As field secretary of the National Restaurant Association, Mr. Wilson conveyed

formal greetings to the gas industry from President McVittie and the restaurateurs of the country, and emphasized the accelerated progress being made by the gas industry in Washington, D. C., through the close cooperation between the Washington Gas Light Company and his Association. In order that the gas industry might further capitalize upon joint action with the National Restaurant Association, he outlined his Association's functions. As an index of progress he noted, "15 to 20 per cent more people are eating in restaurants today than did less than a decade ago—because the restaurateur is paying increasing attention to his responsibilities to the community, and to the training, well-being and satisfaction of employees."

"The Right Sales Punch for Increasing Our Business," W. H. Duguid, Jacksonville, Florida

Insisting that no gas man can most effectively sell commercial cooking unless he is a good cook himself—any more than the automobile salesman can sell without being able to drive—Harold Duguid noted his company's program of training the entire commercial sales staff in the chef's art. "Our most important sales punch," said he, "comes from optimism (which we haven't had much of until lately), enthusiasm (and we need lots of it), hard work (and most of us are used to it), and knowledge (both of the customer's problems and business, and our competitors' activities and successes)."

Likening our competition's invasion of our field to Hitler's blitzkriegs, Mr. Duguid credited competitive effectiveness to (1) long and careful planning, (2) new sacrifice methods of attack, (3) the expenditure of 25 promotional dollars to our one, and (4) fifth-column activities effective only because of our ancient take-it-or-leave-it policy. Fortunately, however, unlike the Allies, we have slowed down the attack and driven the enemy back to our original

lines. Nevertheless, fifth-column influences are still with us in commercial gas selling. Our future lies in the degree to which we now undertake an offensive of our own.

"Factors Influencing Beauty Parlor Equipment Sales," J. B. Druse, Milwaukee, Wis., and W. V. Rifle, Chicago, Ill.

Emphasizing that "we are not in the beauty parlor business, even though we may think so," Mr. Druse recounted Milwaukee's experience in this field, and corroborated the contentions of the Fenton Kelsey article, "A Good Market Gone to Pot," which appeared in a recent issue of *Commercial Gas Salesman*. He urged conferees to obtain and read this treatise. In connection with the Miss America permanent wave machine exhibited on the floor, Mr. Druse described his company's investigation of the apparatus by following the reaction to twenty waves given with it. Results were favorable. A series of demonstrations for local beauty shop operators, invited by mail, resulted in some sales. He noted, however, that "we could do more if we could talk beauty-shop." He recommended that gas companies interested in the field hire an expert graduate of a recognized beauty school to sell hair drying, permanent waving, marcelling and water heating by gas in the beauty field.

W. V. Rifle, inventor of the Miss America unit, described the mechanics and advantages of his gas-fired permanent waving machine. Principal advantages rest mainly upon the fact that waving is executed on a cooling cycle rather than upon a heating or a maintained-temperature cycle. "Although the Miss America can be sold on a radical-economy basis," he advised, "it should not be thus sold—but rather upon the basis of its superior performance—for, where beauty is concerned, women always want the best, and few believe that the best can be the cheapest."

(Continued on page 288)

Clarence H. French Is Dead

CLARENCE H. FRENCH, for many years manager of the hotel equipment department of Standard Gas Equipment Corporation and widely known figure in the commercial cooking equipment field, passed away suddenly on July 4, at the age of 61. Mr. French was considered an authority on commercial cooking problems and had made many addresses on the subject. He was active for many years on American Gas Association and other committees of the food service industry. Early in his business career he was associated with Public Service Electric and Gas Company of New Jersey. Later he returned to the William M. Crane Company, which was merged some years ago with the Standard Gas Equipment Corporation. Mr. French had served over forty years with these firms.

At the time of his death he was a member of the Managing Committee of the Industrial Gas Section of the American Gas Association and had been on this committee for a number of years. He also served on the Commercial Cooking Committee and also was active on other committees of the Food Service Industry. He had a large number of friends all over the country who will miss his wise counsel on problems connected with his field.

Mr. French is survived by his wife and two sons, Hughson and Robert. The latter recently joined the New York office of the Standard Gas Equipment Corporation.

Gas-Heated Food Storage Tables Announced



Series A features sectional control with individual burners

ANSWERING the increasing demand for gas-heated waterless hot food tables, Ershler & Krukin, Inc., Bayonne, N. J., have developed a new line of units. The line consists of two series, A and B, each having distinctive features and embodying important new developments. The construction replaces the old water bath with gas heated wells into which the food insets are placed.

Let Your Satisfied Customers Sell for You

Brooklyn Union Gas Urges Humidity Control

The Brooklyn Union Gas Company, member of the American Gas Association, describes humidity and dampness as the enemies of production and in this connection makes reference to a recent newspaper article which stated that a hot, sticky summer usually follows a long, cold winter. If this prediction turns out to be true, your business, in the opinion of the Brooklyn Union Gas Company, may be affected because of uncontrolled humidity. Consequently, your production schedule will lag and you will experience reduced efficiency, thereby increasing your costs.

The Brooklyn Union Gas Company points to the fact that in the modern industrial process, where every variable factor that controls output narrows the margin of profit, uncontrolled humidity means waste, neglect and lowered profits. Brooklyn Union Gas makes the further observation that uncontrolled humidity brings with it not only delay, uncertainty, reduced efficiency and increased cost, but to fifty manufacturers out of every hundred it also brings the plague of dampness, the worst of all variables that can interfere with modern production methods, and so maintain distorted manufacture and raised materials.

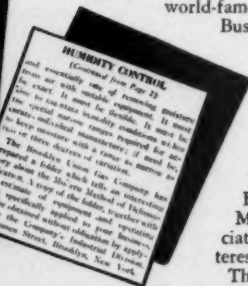
Uncontrolled humidity, according to the Brooklyn Union Gas Company, will yield only to intelligent and exact methods of management, and thus the problem itself is simply solved, and thus the problem itself is simply solved, and thus the problem itself is simply solved.

(Continued on Page 8)

WHEN a good customer who publishes a widely read sales organ indicates that he is "pleased as punch" with some job you have done for him, you write up a summary of what you have to offer to his customers—and let him put it in print. Sure, this sounds like mighty indirect salesmanship—but how would you like to have as world-famous an organization as Brooklyn's Bush Terminal publish an item like that here illustrated about you and your company?

The illustrated item appeared in the Bush Terminal Bulletin, widely read not only by the scores of prominent manufacturers whose headquarters are in Bush Terminal but by hundreds more, in Brooklyn and elsewhere, who the Merchant's and Manufacturer's Association of Bush Terminal desires to interest in its facilities.

The above is submitted as another proof of the value of ingenuity in selling gas to industry.



Going Ahead WITH INDUSTRIAL GAS

Never miss a chance to tell your story from the platform to a lot of people at once—especially when all are potential buyers or specifiers. For example, C. F. Cushing, Bryant Heater Co. (and member of your own A. G. A. Committee on Gas Summer Air Conditioning), was one of ten members of the "faculty" at a June 11-12 Air Conditioning Institute at M.I.T. sponsored by the Massachusetts Dept. of Education and the Boston chapters of several engineering societies. Now a lot more yankee "comers" in the modern art of weather-making know about "Cooling by Dehydration"—and figure it's a job for a gas man.

Last year American hotels spent \$300,000,000 to serve approximately one billion meals to guests and another 220 million meals to employees. Most of 'em were gas-cooked, too!

July's pat-on-the-back for non-residential direct-by-mail goes to New York Power and Light, whose "Keep Thy Shop and Thy Shop Will Keep Thee" broadside in behalf of commercial space heating encloses a packet of eleven handsome 7" x 10" plates (with names and testimonials) showing automatic gas heat at work for shoe stores, grills, lunch rooms, jewelers, super-markets, variety stores, garages, dress shops, furniture retailers, diners, and factories—all in the territory.

PM, New York's new and different afternoon newspaper, had a fire during its first week of operation, traced it to a type-metal furnace, and reported to its readers, "Arthur Rasmussen, Superintendent, said oil burner soot had done it—that we'd get new burners for gas." Incidentally, PM already uses gas to the tune of a million cu.ft. per yr. for its main 7-ton Kemp stereotype pot—and ten million cu.ft. per yr. to melt and keep molten its fancy new "cold-set" ink (keep your eyes peeled for the August INDUSTRIAL GAS for details on this trail-blazing pressure-hot-water job).

Make sure that the right man at each bottle plant in your territory has read the precise, illustrated description of Lamb Glass Company's new natural-gas-fired 90-tons-per-day glass tank (appearing in the June issue of his own trade paper, GLASS INDUSTRY)—and has learned about the "controlability and flexibility for varying production requirements . . . and the low fuel cost" of luminous-flame firing with natural gas.

George O'Neill, York, Pa., writes to stress "the necessity and advantage of placing gas-heated appliances in manual training departments of high schools and other educational institutions." He's seen the results not only in load, but in the fueling preferences of the men turned out from York's William Penn High School and Hanover's Senior High School where he has gas-fired tool-hardening units, soldering-iron furnaces, forges, and brazing torches in the student's shops.

Don't overlook the value of your A. G. A. Industrial Gas Publicity as direct-mail advertising after it has appeared as news. Of the 500 editorial features your Publicity Committee gets published in trade and business magazines each year, several, certainly, can serve as effective advance-salesmen for you—if you order reprints and mail them over appropriate prospect lists. A number of utilities and manufacturers already do it regularly—have put to work reprints of your Industrial Gas Section publicity published in papers like DRUG TRADE NEWS, MANUFACTURING CONFECTIONER, HIDE LEATHER & SHOES, and STEEL.

INDUSTRIAL AND COMMERCIAL NATIONAL ADVERTISING FOR AUGUST

The National Advertising Committee of the Industrial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full-page advertisements will appear in the trade and business magazines listed below during the month of August. These advertisements are prepared in cooperation with the Committee on National Advertising as a part of the Association's national advertising campaign.

Metals Industry

THE IRON AGE (Aug. 15) Savings of \$1350 in 3 months with new GAS-fired furnaces—Oliver Iron and Steel Corporation, Pittsburgh, Pa.
STEEL (Aug. 5)
METALS & ALLOYS
METAL PROGRESS
INDUSTRIAL HEATING

Food Industry

BAKERS HELPER (Aug. 3) "Our GAS-fired ovens save time and money"—Meth's Bakery, Bryn Mawr, Pa.
BAKERS WEEKLY (Aug. 17)
Tasty, uniform quality sausages improved with GAS fuel and modern GAS equipment—Eastern Market Sausage Company, Detroit, Mich.
FOOD INDUSTRIES

Ceramic Industry

CERAMIC INDUSTRY
Champion Spark Plugs made with a Champion fuel . . . GAS, in Champion's Ceramic Division, Detroit, Mich.

Hotels & Restaurants

HOTEL MANAGEMENT
AMERICAN RESTAURANT
"Saving on GAS and meats . . . plus a cooler kitchen" with modern GAS equipment—Penn Alto Hotel, Altoona, Pa.
CHAIN STORE AGE
(Fountain & Restaurant Section)
"Most of our installations are practically 100% GAS"—E. C. Bryan, McLellan Stores Co., New York.

Hospitals & Schools

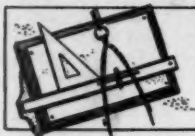
MODERN HOSPITAL
32% savings in GAS fuel with modern GAS equipment—Episcopal Hospital, Philadelphia, Pa.
AMERICAN SCHOOL BOARD JOURNAL
"Saving of \$33 per month on GAS alone" with modern GAS equipment—Jesuits' High School and College, New Orleans, La.

Processing Industry

CHEMICAL & METALLURGICAL ENG'G
Victor Electric Products, Inc., Cincinnati, Ohio, improve quality, cut cost, with speedy, uniform GAS.

General Manufacturing

INDUSTRIAL POWER
Higher quality, greater uniformity with GAS—Fort Pitt Spring Co., Pittsburgh, Pa.



Technical SECTION

F. M. GOODWIN, Chairman
D. P. HARTSON, Vice-Chairman

Practical Operating Problems Reviewed at Annual Production and Chemical Conference



W. K. Beard of Philadelphia, chairman of the Gas Production Committee and co-presiding officer at the Conference, talks things over with L. E. Knowlton, Providence, and F. W. Hartzel, Philadelphia. At right are W. H. Fulweiler, Philadelphia, and C. J. Ramsburg, Pittsburgh

ENGINEERS, chemists and production men from all parts of the country made outstanding contributions to the operating knowledge of the gas industry at the annual conference of the Production and Chemical Committees of the Technical Section, held May 20-22 at the Hotel Pennsylvania, New York City. Close attention to national defense and consequent emphasis on the production and chemical possibilities of the gas industry made this one of the most significant meetings in recent years. More than 300 delegates listened to the presentation of the formal papers and participated in informal discussions of scores of problems.

W. K. Beard, of The Philadelphia Gas Works Company, chairman of the Gas Production Committee, and S. J. Modzikowski, of The Peoples Gas Light & Coke Company, Chicago, chairman of the Chemical Committee, presided at the joint sessions.

Luncheon Meetings Popular

Improving on past performance, the informal luncheon conferences were perhaps the most highly successful phase of the meetings. Three of these conferences were held devoted to (1) Carbonization and Coke under the chairmanship of C. R. Locke, Chicago By-Product Coke Co., Chicago, (2) Water Gas Operations directed by R. M. Kellogg, Consolidated Edison Co. of New York, Inc. and (3) Chemistry in Industry led by S. Cohn, The Peoples Gas Light & Coke Co., Chicago. These confer-

ences, which lasted more than three hours each, brought out valuable information on a wide array of topics.

In the Carbonization and Coke luncheon, special interest centered on the subject of the addition of oil to oven coal with emphasis on its effect on the bulk density of the coal and the yield of gas and other products from the oil. Another popular subject involved the best type of crusher rolls for minimum breeze production. An exchange of views on the most economic method of maintenance brought out interesting information.

The opening session, Monday morning, began with a brief welcoming address by Alexander Forward, managing director of

the American Gas Association. Stressing the importance of the engineer, Mr. Forward said that the technical side of the gas industry is unsurpassed in its service to the public. He also emphasized the necessity of assuring "continuity of young blood to keep alive the accumulated knowledge of the past and abreast of newer methods and discoveries."

Clifford E. Paige, president, The Brooklyn Union Gas Company, and past president of the Association, stressed the widening opportunities the gas industry offers its engineering personnel. Mr. Paige also called attention to the fact that gas holder costs in Brooklyn have been more than halved during the last 15 years.

Oil Industry Marketing

Speaking on the "Effect of Marketing and Refining Methods of the Oil Industry on Future Availability of Residue Enriching Oils," A. E. Pew, Jr., vice-president, Sun Oil Co., Philadelphia, Pa., gave facts and figures relating to trends in the production of heavy fuel oils. Mr. Pew said our present 18 billion barrels of known oil reserves means a life of some 18 years without taking into account any new discoveries. As a matter of fact, during recent years known crude oil reserves have increased faster than oil consumption. Of particular interest to gas men was the speaker's conclusion that there is no reason to anticipate an oil shortage and that no trend in refinery technique offers any probability of a shortage of heavy oils.



The Peoples Gas Light and Coke Company, Chicago, was well represented at the Conference. Pictured here are, left to right: C. R. Locke, R. O. Moriarty, S. J. Modzikowski, chairman of the Chemical Committee, S. Cohn, K. B. Nagler (on floor), B. Duglison, and H. E. Ferguson. Filling out his registration card is Professor C. C. Furnas of Yale University

The search for a method to evaluate enriching oils that would be quicker and less complicated than the laboratory cracking test and with a wider application than various empirical formulae available has resulted in a new proposed method. This development was presented and described in a joint contribution by W. F. Kugel and E. M. Bliss, Public Service Electric & Gas Co., Harrison, N. J., on the "Empirical Relation Between the Physical Characteristics of an Oil and Its Yield as Determined by a Cracking Test."

The empirical relation presented was said to be an outgrowth of the Holmes' method since it makes use of the dispersion and specific gravity. It was said that on oils of widely divergent characteristics the proposed method checks within a range of plus or minus three per cent of the cracking tests and that the method has the advantage of low first cost and negligible operating cost. As a result of their work over the past two years, Messrs. Kugel and Bliss feel that in case of a discrepancy, the cracking test is more apt to be at fault than the formula.

The recently available American Gas Association publication "Fuel-Flue Gases" was brought to the delegates attention by Louis Shindman, Rochester Gas & Electric Corp., Rochester, N. Y., who itemized its contents and described its purpose. This valuable work is a contribution of the Chemical Committee of the Technical Section.

Water Vapor in Gaseous Fuels

The first paper on the Monday afternoon session, "Second Progress Report on the Determination of Water Vapor in Gaseous Fuels," presented by Dr. A. W. Gauger, was a joint contribution by Dr. Gauger, F. C. Todd, E. K. Schluntz and W. J. Wiseman, all of The Pennsylvania State College, State College, Pa. Progress was reported on the use of the color change produced by the hydration of selected salts for the measurement of the absolute water content of gaseous fuels. Preliminary experiments showed considerable promise for the method so an accurate portable colorimeter was assembled. A series of tests

Under the able leadership of S. J. Modzikowski, chairman of the Chemical Committee, the Conference made smooth progress. Left to right, are: W. R. Teller, Cleveland; Chairman Modzikowski; and E. L. Sweeney, Everett, vice-chairman, Chemical Committee



designed to determine the limitations of the method is nearly complete.

A modified test for the evaluation of purifying materials together with test results on six commercial materials were given in a joint paper on "Evaluation of Gas Purifying Materials" by James W. Penney and Arthur E. Sands, both of the Boston Consolidated Gas Co., Everett, Mass. The work in this paper was based on the supposition that oxides may be evaluated by consideration of their relative ability to react with pure hydrogen sulphide and the ability of the sulphided material to react with pure oxygen. Conclusions were reached as follows:

"Six commercial oxides and one proposed material were tested for rate of reaction with pure H_2S on both first and second foulings, as well as for revivification with pure oxygen. Tests were conducted at a constant temperature of $92^\circ F.$ with water saturated H_2S (O_2) at 760 mm. Hg. total pressure.

"In general there was a rapid rate of sulphiding for several minutes followed by a gradual leveling off of rate as the material continued to react with the H_2S at a slower rate. Second fouling rates were usually better than the first although both similar and poorer second fouling rates were found.

"Revivification curves were markedly similar. They lacked the initial high rate of reaction shown by the sulphiding curves.

"Comparisons between the Kunberger

foulings and these special tests were made. The differences were explained by the more complete data as given by the special test.

"These special tests gave no information as to trace removal properties as evidenced by comparison with plant performance and special tests where an oxide-sawdust mixture was fouled with a gas containing 150 grains of H_2S per 100 cubic feet and 0.9 per cent oxygen until a trace came through.

"However, the high initial rate of sulphiding correlated with plant performance on several oxides as regards removal efficiencies over long periods of time. The improvement on second fouling as experienced in the plant with certain oxides was observed in the corresponding tests and these improvements were better indicated by the special test than by the Kunberger tests."

Living Organisms in Purification

An authoritative discussion of "Living Organisms in Gas Purification" was presented by Gilbert E. Seil, technical director, E. J. Lavino Company, Philadelphia, Pa. Mr. Seil reported that in every case investigated shavings were found to be the source of the living organisms. An examination of hundreds of bales of shavings revealed that at least 75 per cent of them were infected. The amount of infection in the shavings, according to Mr. Seil, "was usually very slight, and very few of the fungi had anything to do with sulfur but when the shavings are made into sponge to be used under conditions of temperature with humidity which are favorable to growth of some of the fungi, the difficulties described in the paper result."

Mr. Seil concluded: "The problem which confronts the gas industry is the development of a method to disinfect wood shavings so that any living organisms present do not interfere with gas purification. Investigation shows that disinfecting the shavings or the sponge with the higher phenols is probably the cheapest and the best way to prevent the growth of living organisms in dry boxes. Tar acid or, if one prefers, pure phenol can be advantageously used. The amount required for effective treatment is approximately one one-hundredth of a pound of phenol or equivalent per bushel of sponge."

The first paper of the Tuesday morning session considering "Light Oil Recovery



Two camera shots bring together a distinguished group of technical experts. Left to right: F. M. Goodwin, Boston, chairman of the Technical Section; P. T. Dashiell, Philadelphia; A. E. Pew, Jr., Philadelphia; A. C. Cherry, Cincinnati; L. W. Tuttle, Chicago; and D. P. Hartson, Pittsburgh, vice-chairman of the Technical Section

from Coke Oven Gas" was prepared by W. Tidley and M. J. Miller, Semet Solvay Engineering Corp., New York, N. Y., and presented by H. B. Pearson, general manager of the same company. The absorption or wash oil system for the commercial recovery of crude light oils from coke oven gas was listed as the preferred type for American practice due to its advantages of continuity of operation, minimum amount of labor and availability of a suitable wash oil. The operation of this system was described and pictured in valuable detail.

When a 575 B.t.u. coke oven gas is stripped to recover two gallons of light oil per ton of coal carbonized the B.t.u. drops to 550. When three gallons of oil are recovered the B.t.u. content of the gas will be around 537. The fact that light oil recovery reduces the B.t.u. content of the gas is responsible for the small number of light oil recovery plants in the gas utility industry. However, there are several large situations which have found it practical and economical to remove a portion of their light oil and replace it by further enrichment of their send out gas, using heavy oil in their water gas carburetors. It was stated that with modern carbureted water gas sets very little difficulty, such as was encountered in the past with emulsion troubles, would be experienced in recovering light oil from carbureted water gas.

Coke Oven Light Oil

Until recently, due to high investment and operation cost for plant, low revenue in products together with high production cost for light oil, the average gas plant could not recover light oil profitably. Several factors have contributed to change this picture in recent years and these were listed by B. J. C. Van der Hoeven, Koppers Company, Pittsburgh, Pa., in his paper on "Motor Fuel from Coke Oven Light Oil" as follows:

1. Possibility of using cheap heavy oil for B.t.u. replacement.
2. Improved technique of light-oil recovery with emphasis on selective removal of the higher boiling, higher priced hydrocarbons from the gas.
3. Improved technique of motor-fuel manufacture allowing conversion of a large part of the light-oil to finished motor-fuel (inhibited motor-fuel) at a minimum cost and maximum yield, the product to be sold locally. The remaining higher priced material in crude form is shipped to a central refining plant.
4. The higher prices now prevailing for certain light-oil products, largely due to war conditions, are reflected in a higher price for crude light-oil.

Mr. Van der Hoeven's paper dealt largely with item No. 3, the manufacture of motor fuel from light oil with details of an improvement in this procedure to date.

Sludge Inhibitor and Still

A "Sludge Inhibitor and Novel Still Used in Recovering Light Oils" was described in a joint contribution by O. W. Lusby

and C. E. Utermohle, Consolidated Gas Electric Light & Power Co. of Baltimore. In 1933 the necessity of controlling the condensation of oils in the distribution system at Baltimore was recognized and the scrubbing of gas with quantities of oil far in excess of those required for naphthalene control was investigated. A Feld type scrubber was used with oil rates of about 30 gallons per million cubic feet.

Several years of this operation adequately proved the advantages of scrubbing with higher rates of oil. It became evident, however, that the gradual change from using gas oil as a carbureting medium to 100 per cent heavy oil operation required either the use of a special heavy enriching oil which was adapted to both manufacturing and scrubbing operations, or the use of a special scrubbing oil and the installation of a process for reactivating it.

The first alternative was impractical. The second involved an expenditure for an oil reactivating plant, which, however, would make possible the recovery of light oils as a credit to operations and permit the use of a selected scrubbing oil. The latter is a decided advantage, since, at times, when scrubbing with gas oil, it was found that the gas carried sufficient quantities of the lower boiling fractions of the gas oil into the distribution system to adversely affect appliance operation. For these reasons, an investigation of methods for reactivating scrubbing oils by stripping with steam was undertaken.

Following the development of methods of reducing and controlling sludge formation in scrubbing oil by the addition of hardwood distillate a new type of plant was designed and built to operate at 450° F. in which heat exchangers recover about 80 per cent of the heat. The oil reactivating plant was designed to handle 50,000 gallons of rich oil per day. At Baltimore there are no oils in the gas at the outlet of the scrubber which will condense at 32° F. With scrubbing rates of 900 gallons per million cubic feet, which have been used during the past year, the removal of indene by the scrubber has been practically 100 per cent; and the removal of styrene 80 per cent.

Standby Gas Manufacture

New Orleans experience in the manufacture of high B.t.u. gases using three different processes with the actual tabulated results was given by H. M. Blain, Jr., New Orleans Public Service Inc., New Orleans, La., in his paper on "The Manufacture of High B.t.u. Gas for Peak Load and Stand-By Purposes." Soon after New Orleans began using natural gas experiments were carried on to determine the best interchangeable gas that could be made, using a carburetted water gas set. A minimum 950 B.t.u. gas was desired. Since 1935 manufactured gas has been produced each winter for peak loads using three types of operation, (1) Koppers Process with reversed air blast, (2) Refractory Screen Process and (3) Single Stage Oil Cracking. Results

with operating data were presented by Mr. Blain on all three types of operation.

The first two papers of the Wednesday morning session were devoted to the timely subject of pilot outage. In his presentation on the "Influence of Pilot Design on Tendency to Outage," W. R. Teller, Chief Research Engineer, American Gas Association Testing Laboratories, Cleveland, Ohio, summarized the various sources of outage and reviewed design elements and installation practices which have been successfully followed in reducing outage to a minimum.

W. L. Shively, Boston Consolidated Gas Co., Everett, Mass., spoke on "Determination of the Causes of Pilot Outage." Mr. Shively pointed out that the determination of the cause of pilot failure is rendered difficult by the minute quantity of material required to cause pilot outage. Sensitive test methods applicable to such small deposits are available which enable the identification of most types of deposits and some of these were described in detail by Mr. Shively. Special tests to secure information in addition to that yielded by laboratory examination of pilot deposits were also described. The importance of considering conditions in the manufacturing plant, nature of various impurities carried by the gas, as well as general conditions in the distribution system were stressed as desirable in arriving at a valid conclusion as to the cause of pilot outage.

Foundry Coke Characteristics

"Foundry Coke: Measurable Characteristics" was handled in valuable detail by B. P. Mulcahy, Citizens Gas & Coke Utility, Indianapolis, Ind. Mr. Mulcahy discussed the selection of coals; the oven-heat distribution—coke preparation; cupola melting; measurable coke characteristics and combustion characteristics. His discussion showed that the principal features of the coke are dictated by both the carbonizing process and the cupols melting process and that full consideration must be given to the correlation of all factors in order to produce a satisfactory material; also, that the essential features of foundry coke are definitely measurable.

The final paper at the Wednesday morning session by J. H. Taussig, Jr., The Philadelphia Gas Works Co., dealt with "A Study of the Theoretical Advantages of Low Air: Steam Ratios in the Manufacture of Blue Gas and Carburetted Water Gas." Mr. Taussig stated that "from the standpoint of generator fuel consumption, the lowest air:steam ratio that can be used and still supply sufficient heat for oil vaporization and fixing is the most economical. . . ." There is, however, he pointed out, the cost of the steam to be considered. The most economical point of operation, he said, "may be found by plotting the cost of steam against the air:steam ratio and the cost of fuel against the air:steam ratio and selecting the air:steam ratio at which the sum of the two costs is a minimum."

The report of Gas Conditioning Commis-

use by the committee chairman, L. J. Willen, Public Utility Engineering & Service Corp., Chicago, Ill., was the first order of business at the Wednesday afternoon session. Describing the progress and plans as regards this work, Mr. Willen said that the Managing and Advisory Committees of the Technical Section had endorsed a request of the Gas Conditioning Committee recommending an appropriation for beginning investigation work leading to a review of existing data and formulation of plans for a pilot plant for complete removal of organic sulfur from gas.

A field in which there has been little standardization of materials and not too much information available was effectively handled by C. C. Furnas, associate professor of Chemical Engineering, Yale University, New Haven, Conn., in a paper on "Comparison of Different Packings in Absorption and Stripping." Performance of different packings was discussed and data presented to serve as a guide for the selection of packings for specific purposes. Tables were given showing comparison of packings for gas absorption when gas film is controlling; comparison of packings for gas absorption when liquid film is controlling and one the relative efficiencies of different packings.

Carbonization Stresses

V. J. Altieri, chief chemist, Eastern Gas & Fuel Associates, Everett, Mass., in talking on "Stresses and Strains Generated During Carbonization" listed the purpose of his paper as follows:

1. To describe the further development of an engineering model of the coke oven.
2. To present data and information secured while using a model of the coke oven to evaluate the stresses and strains developed during carbonization of different coal.

Based on the data and information presented the conclusions were reached that:

1. Considerable uncertainty is introduced when critical stress is determined by devices that neglect the dissipation of stress resulting from permitted wall movements. This uncertainty may be eliminated by evaluating suitable stress-strain ratios.
2. Uncertainty is also introduced when the apparatus and procedure neglect dissipation of stress resulting from plastic flow and upward displacement of the charge.
3. The magnitudes of stresses generated during carbonization depend largely upon three factors: (1) the potential behavior of the coal; (2) the design of the oven; (3) the operating conditions.
4. During the early stages of coking in a coke oven, even highly contracting coals, tending toward a natural state of rest will slump within the coke oven and extend from one wall to the other.
5. During carbonization in coke ovens there is a tendency toward consolidation and compression increasing the bulk density of the charge, thus tending to increase side thrusts.

6. Because of their compressibility characteristics, some charges may behave so as to dissipate excessive stresses that are generated locally within the oven.
7. A most important property of the charge is recognized; namely, its ability to sustain excessive stresses and to react by adequately supporting the oven walls.
8. The relative rates of consolidation and displacement, in part, determine the maximum lateral thrust generated during carbonization.
9. The factor of safety used to avoid damage obviously lies largely in the sphere of coke oven operation.

10. Use of engineering models enables one to evaluate to close approximation the maximum side thrust generated during carbonization and exerted against coke oven walls. Furthermore, the procedure described in this paper, more so than any other we know about, demonstrates the behavior of coals with respect to the stresses and strains generated under various conditions met with in industrial use.

The conference concluded with the "Open Forum" at which the Luncheon Conference Chairmen made their reports.

Association Contrasts—1888 and 1940; Oldtimer Looks Back 52 Years



A veteran of the 1888 gas convention, Alfred E. Forstall (left) tells E. A. Dieterle, Chicago, how they used to do it

By ALFRED E. FORSTALL

Consulting Engineer, Montclair, N. J.

WHILE attending the Gas Production and By-Products luncheon, during the recent Joint Conference of the Production and Chemical Committees, the writer was impressed by the fact that the discussion dealt almost entirely with by-products and only to a small extent with the production of gas. In 1888, when he was elected a member of the American Gas Light Assn., by-products or residuals as they were more apt to be called, received scant attention, interest being concentrated on the apparatus and methods employed for the manufacture of gas, and principally of coal gas.

At that 1888 meeting in Toronto the papers covered the character and sequence of apparatus in a coal gas plant; the construction of gas holders with steel tanks above ground, a new innovation; retort charging and drawing machines, also new; the Lux Gas Balance; the distribution of gas under extremely low temperatures; and the gas producing qualities of Nova Scotia coal.

It seems worth noting here that Arthur Hewitt, so well known and loved in gas

association circles in later years, had then just taken a clerical position with the Consumer's Gas Company and did much of the preparatory work for the meeting. He was not eligible for membership in the Association at the time, being neither "a president, secretary, treasurer, engineer, consulting engineer or superintendent of a gas company" nor "a manager of a gas works." The writer went in under the last qualification.

Gas Engineers Better Trained Now

A contrast as sharp as that between the subject matter of the 1888 meeting and the 1940 luncheon discussion also obtains between the educational background of association members at the two dates.

In 1888 there were only five or six college men in the association. In his address President Thomas Turner, of Charleston, S. C., said "As a rule the gas business has not been managed by men who have had special education and training for the work before engaging in it, but I am glad to know that a gradual and sure change is already upon us, and I am certain that the business of gas manufacture will receive a fresh impetus when the young men who are now coming up with especially trained minds and hands bend their energies to the work of developing the science of manufacture of illuminating and, I may add, heating gas." And in another place he referred to the desirability of having men plan to enter the gas business rather than to drift into it "from accident, as many of us did years ago."

The men who thus drifted in were largely construction engineers, who remained to operate the plants which they built, or men with innate operating ability who advanced from clerical into managerial positions. Few had even the superficial knowledge of chemistry required to understand the theory of the correct adjustment of the primary and secondary air supplies of the generator furnaces then just coming into use. Also knowing nothing about

(Continued on page 287)



A. G. A. Laboratories Study Boltless Pipe Couplings

By K. R. KNAPP

Chief Engineer, A. G. A. Testing
Laboratories, Cleveland, Ohio

PIPE couplings of different styles and design have long played a most important part in gas distribution lines. Within the last decade a number of important improvements and developments have taken place in such equipment. This action was no doubt stimulated by a study of the general subject of pipe joints initiated by the Distribution Committee of the Technical Section of the American Gas Association through its Subcommittee on Pipe Joints. Advantage was taken of data presented by the results secured in this program in improvement of existing joints and development of others. While this study was devoted mainly to joints used for cast iron pipe, consideration was also given to certain types which could be employed for steel pipe as well and these shared in the developments which have since taken place.

Boltless Couplings Tested

In the last few years what is generally termed the "boltless" type of coupling has been receiving considerable attention. Couplings of the bolted type have long been used but the possibilities of employing couplings which would be suitable for the same type of service but constructed without the use of bolts has recently been generally recognized. In order to secure definite facts on the construction and performance of this new type of coupling, now quite widely used in gas service lines, the Subcommittee on Pipe Joints and Pipe Materials of the Distribution Committee has for some time been considering the desirability of the conduct of Laboratories' tests to secure such data. Following some preliminary studies, a decision was reached about a year ago to proceed with the conduct of such tests according to a carefully prepared program, the work to be conducted by the Testing Laboratories.

The conduct of two principal series of tests was agreed upon for the purpose of reproducing as far as practical the effects of service conditions. These included, first, repeated longitudinal movements of the pipe in and out of the coupling and, second, repeated transverse movements of the pipe with the coupling restrained. Both series of tests were to be continued to the point where failure might be anticipated. In addition, a third series of tests to determine the ability of the coupling to withstand extreme crushing loads was desired. The first two were considered as being of the greatest importance as they were felt to repro-

duce to a larger extent conditions which couplings employed in gas service lines are likely to be called upon to meet in practice.

It is the purpose of this paper to discuss briefly the details of the two principal series of tests mentioned above and to summarize the performance obtained from representative types of boltless couplings under the conditions imposed. A few conclusions will also be presented based on the information obtained to indicate the various desirable features which should be embodied in the design of couplings of this type to insure their better performance in service.

Before taking up the tests themselves it is desired to refer briefly to the particular samples of boltless couplings which were chosen for study and to review the principal features presented in their design. At the same time the general methods followed in preparing the test specimens and their assembly will be reviewed.

Following the suggestions of the committee supervising the work, the present

study was restricted to three sizes of boltless couplings, namely, $\frac{3}{4}$, $1\frac{1}{2}$ and 2 in. These were felt to be representative of the range of sizes which were most commonly employed. The products of 6 manufacturers were selected for conduct of the initial work, it being considered that a representative cross-section of the various styles and designs of boltless couplings would thus be covered. After the work was undertaken samples of 2 additional couplings were received and included in the tests. In all, 8 designs of couplings were studied.

In requesting the submission of samples, manufacturers were asked to supply the type of gasket which they recommended for the couplings furnished. In the majority of cases these were of the plain rubber type. Three couplings employed the armored type. No special consideration was given to whether or not the couplings were designed for manufactured or natural gas service as the test conditions did not warrant so doing. All samples were supplied in duplicate together with a sufficient number of gaskets to enable new samples to be used for each separate test.

Figure 1 shows the different sample couplings. In each instance a gasket is shown

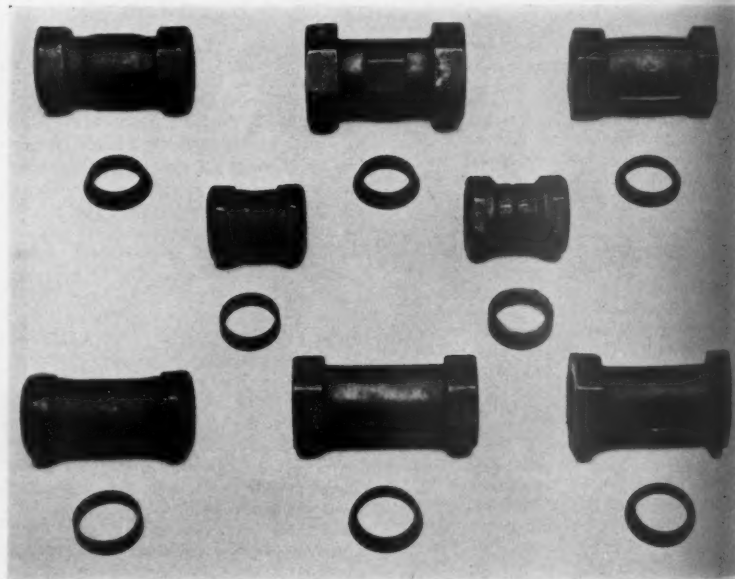


Fig. 1. Sample boltless couplings tested

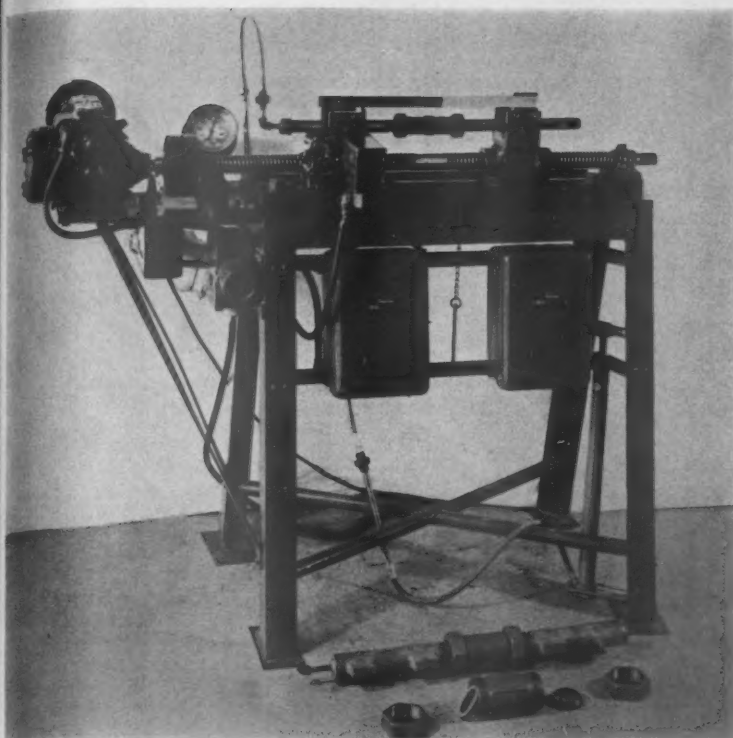


Fig. 2. Equipment for longitudinal cycling tests of boltless couplings

separately so that its general shape and design can be observed.

While the test specimens were necessarily different depending on the kind of test to be conducted, the method of their preparation was similar throughout. Standard black pipe was used for construction of special coupling mountings or holders. In mounting the couplings care was taken to insure that the pipe ends were spaced with a clearance of $\frac{1}{4}$ in. to $\frac{1}{2}$ in. within the coupling. In the majority of tests no lubricant was used. The torque employed in tightening up the couplings was that recommended by the manufacturer except in instances where higher torque was found necessary to make up the joints properly to insure satisfactory results. Certain preliminary tests indicated that inadequate torque had been applied and this was accordingly increased in the preparation of later samples. All specimens were allowed to stand at least 24 hours before testing.

It was felt desirable to impose quite a severe test condition in the conduct of the longitudinal tests which were designed to reproduce the axial movement of the pipe in and out of the coupling due to temperature changes and other stresses. The plan followed was to subject the couplings to repeated expansions and contractions of $\frac{1}{2}$ in., one expansion and the following contraction constituting a cycle. The movement selected was considered to represent a substantial factor of safety over and above the actual movement to which such couplings

would be subjected in service. A total of 2,000 cycles of $\frac{1}{2}$ in. movement was imposed. Observations were made at the end of each 500 cycles.

Equipment employed for this test is shown in Figure II. It was assembled by an operating utility company which had previously conducted preliminary tests for the Subcommittee on Pipe Joints and Pipe Materials and was very kindly loaned for the present work. It embodied a number

of accessories designed to render its operation automatic and to provide for stopping the test when the internal pressure fell to a predetermined point. Specially designed coupling holders were employed for mounting the test specimens the details of which are shown in Figure III. Provision was made through appropriate connections for placing the coupling under internal pressure. A diagrammatic sketch showing the couplings and holders placed in position in the test machine is given in Figure IV.

Cycling of the couplings was accomplished through the rotation of a heavy drive screw carrying a right-hand thread at one end and a left-hand thread at the other, each engaging steel nuts which were welded to the two holder mountings, one on either side of the test coupling. The drive screw was actuated by a motor driven worm gear, its rotation forcing the couplings in or out of the holders according to its direction. An adjustable stop on one of the holder mountings actuated an operating lever of a switch in the motor reversing circuit thus causing reversal of the motor and changing the direction of rotation of the screw at the end of each one-half cycle. The desired amount of travel was secured by adjustment of the stop.

After a satisfactory initial pressure test for tightness, the assembled test specimens were mounted for cycling and necessary adjustments made to secure a movement of $\frac{1}{2}$ in. Care was taken to make certain that the minimum clearance between the ends of the holders was not less than $\frac{1}{4}$ to $\frac{1}{2}$ in. mentioned above. Flexible tubing connections were made from the test specimen to a pressure gage and special limit switch so designed that a drop from the initial pressure to 80 lbs. per sq.in. broke the motor circuit.

In undertaking these tests the end point was first considered reached when a drop of 20 lbs. internal pressure occurred. It was found as a result of the various tests conducted that in some instances a tendency

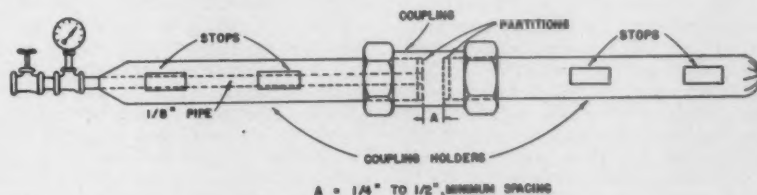


Fig. 3. Test specimen assembly

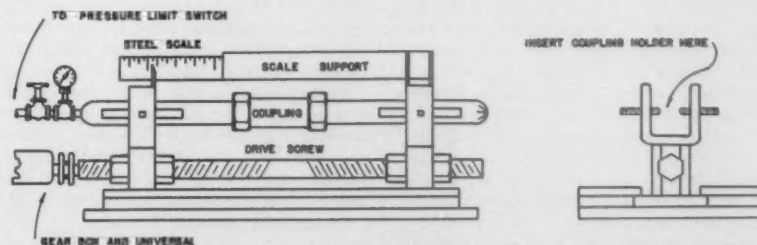


Fig. 4. Apparatus for longitudinal tests on boltless couplings

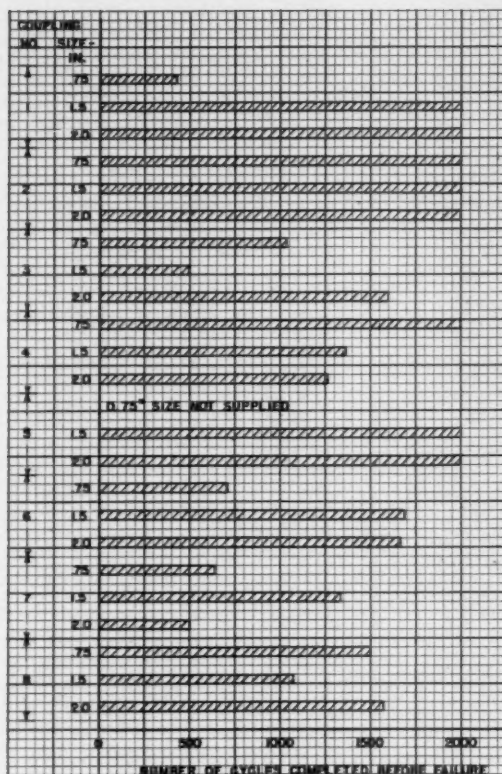


Chart 1. Performance of couplings under longitudinal cycling tests of $\frac{1}{2}$ inch

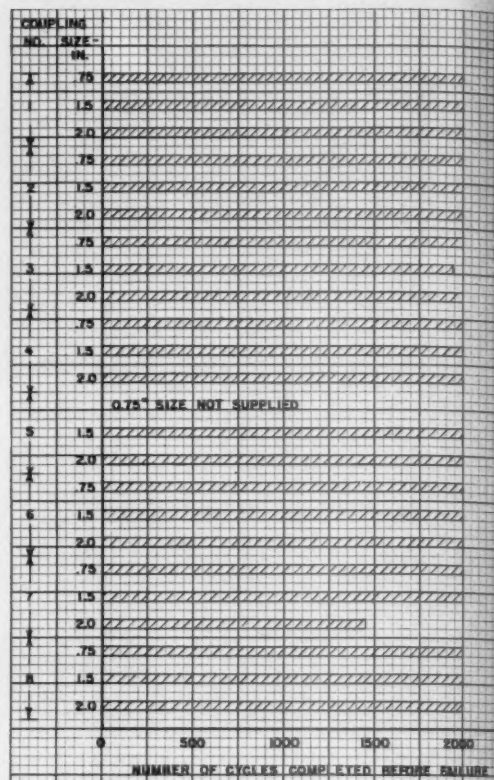


Chart 2. Performance of couplings under transverse cycling tests to metal-binding

existed for the coupling to move or "creep" to a considerable extent from its original position on the holders. In view of this performance it was felt advisable to place a definite limit of 1 in. on the amount of such motion permitted and consider any movement in excess of this amount as indicating failure. Therefore, two distinct causes of failure were recorded.

The results obtained on the different samples of couplings under the longitudinal cycling tests are shown in Chart 1. This has been arranged to indicate the number of cycles completed before failure took place due to either of the two conditions described and covers the average performance of two individual samples of each size and type of coupling tested.

The purpose originally in mind was to employ a considerably smaller number of cycles than the 2,000 finally selected. It was felt, however, that by extending their number much additional data could be secured on the performance of couplings which had satisfactorily passed the former end point. In a number of instances, however, the specimens examined satisfactorily withstood the full 2,000 cycles. The first 500 cycles were the most critical, the number of failures gradually increasing from this point.

Failures in most instances were due to loss in pressure. In a relatively few cases

failure due to "creep" of the couplings on the holders was noted although it was observed that this was restricted to certain types of couplings. From the performance observed it was felt that the tendency to "creep" was probably due to a slight inequality of gasket pressure at the opposite ends of the coupling. When the test was first started the greater motion occurred at the gasket under the lower compression. As a greater wedging of the gasket was considered to take place during compression than during expansion, the force exerted on the coupling by the holder in the loose gasket would be greater during the compression half of the stroke than during the expansion half, and thus the tendency toward movement occurred. In practically all cases where this action was observed, the coupling moved away from the holder on which most of the motion took place. Therefore this performance indicated the necessity of application of an equal torque to the two follower rings.

The majority of the tests were made without application of any lubricant to the coupling holders in the assembly of the specimens. As the use of such lubricant was thought to assist in the seating of the gasket and thus reducing the possibility of a change taking place in the pressure at the gasket after a period of standing, some tests were conducted where the lubricant was

used. It was found, however, that the results in every case were not as satisfactory as those obtained on couplings assembled without a lubricant. In addition the gaskets, on examination after testing, were found to be damaged to a greater extent than when no lubricant was employed. This condition, it was felt, might be caused by the formation of a slight amount of rust or scale on the surface of the holder, due to the action of the water in the lubricant.

Time was evidently a factor in the performance of lubricated versus unlubricated specimens as one lubricated specimen was found to be satisfactory after 2,000 cycles of operation with no apparent damage to the gaskets, the test being made shortly after assembly. Other tests made on the same coupling after a period of standing resulted in an early failure. Evidently the use of a lubricant was effective for a short time only, so far as these particular tests were concerned, after which it produced opposite results. It was therefore felt advisable to conduct the remaining tests without employing any lubricant whatever to aid in the assembly of the specimens.

In the conduct of the transverse cycling tests the coupling was made up using standard pipe in the manner previously described. After standing 24 hours or more the coupling was rigidly clamped in a horizontal position to a mounting with one end of the

pipe free. This free end was then deflected vertically on opposite sides of a center line to a point where metal binding took place, the limiting angle having been previously determined. In the case of the larger specimens particularly it was found advisable to restrain any longitudinal movement of the pipe with respect to the coupling as otherwise the internal pressure acting on the greater cross-section presented by the larger couplings produced a tendency to failure due to forcing of the pipe out of the coupling.

All specimens were maintained under a pressure of 100 lbs. per sq.in. at the start of the test. Failure was considered to take place when the pressure dropped to 90 lbs. per sq.in., this figure being arbitrarily selected. An improvised test assembly consisting of a motor driving a walking beam through the necessary speed reducing mechanism and connections was employed to produce the deflections desired.

Chart II shows the results of the transverse cycling tests, arranged in form similar to that used for Chart I. It will be observed that the comparative performance is much better than that shown by the longitudinal tests. This seems quite logical in view of the fact that the test conditions were less severe and no actual motion of the pipe relative to the gasket took place. It will be observed that the couplings which failed by the widest margin in the longitudinal cycling tests also gave a similar performance in the transverse tests, thus indicating the inability of these types to withstand the two test conditions imposed.

Majority Withstand Test

Following the transverse cycling tests, successive maximum loads were applied to the free end of the pipe, with the coupling clamped rigidly in position, up to the point where leakage occurred. The majority of the couplings tested withstood, without leakage, the maximum torque which could be applied without deformation of the pipe. No attempt was made to continue the loading past this point in such instances.

The final test imposed was one to destruction by actual crushing of the coupling in a testing machine. The results indicated that the couplings were highly resistant to crushing action without the occurrence of leakage. This was particularly true in the case of the smaller sizes. The same coupling which failed by the widest margin in both the longitudinal and transverse cycling tests also showed the least resistance to crushing.

In the course of this study examination was made of several samples of joints returned after several years in service which were contributed by members of the supervising committee. As only a limited number of boltless samples were available, several of the bolted type were submitted. These ranged in sizes from 1 1/4 to 1 1/2 in. Several couplings of both types which appeared in the best condition were selected for tests to destruction to determine the maximum load which it was necessary to apply to produce movement as well as the

total movement which took place before the joints leaked excessively. The application of a rather low maximum load was usually sufficient to start movement of the pipe out of the coupling. After movement started, the sample continued to elongate with a dropping load. In the majority of cases the greater movement took place at one joint. The total elongations, before sudden release of pressure occurred, varied from slightly over 1 in. to 3 in., depending on individual specimens.

Other samples submitted were dismantled and the condition of the gaskets inspected. About one-half were found in satisfactory shape while a number of the remainder were in poor condition with the gaskets much deformed. Little evidence of bonding of the gasket to the metal of the pipe or coupling could be determined. Separation of the gaskets from the adjacent metal surface was readily effected upon dismantling the couplings.

Based on the results of the different tests conducted, it appears that certain factors should be kept in mind to insure satisfactory performance. These include features not only of coupling and gasket design but their assembly as well. They will be briefly reviewed.

It is felt that all couplings should possess adequate length. The performance of the shorter couplings was not as favorable as that of the longer ones. The desirability of providing for close confining of the gasket material and the absence of voids into which the gasket material could "cold-flow" was strongly emphasized by the results of the tests. These also showed that presence of sharp edges on metallic surfaces in contact with gaskets tended to cause damage to the gasket after repeated movements. In addition the necessity for application of adequate torque in the assembly of the gaskets in order that best results might be obtained was clearly indicated. As the ability of a joint to withstand leakage in service depends largely on the proper confining of the gasket material and the maintenance of adequate pressure imposed during assembly, the advantage of insuring that both of these conditions are met will readily be apparent.

In view of the severity of the test conditions imposed, particularly in the case of the longitudinal tests, it is believed that couplings capable of withstanding them successfully should prove satisfactory under service conditions. While in certain instances performance was unsatisfactory, reasons were usually apparent on analysis to indicate the causes for failures and to show ways and means in which they might be prevented. It is quite significant to observe that in spite of the wide difference in the test methods employed, as between the longitudinal and transverse cycling tests, the same couplings gave the most unsatisfactory performance under each test condition. This it is believed indicates the desirability of certain modification in their construction which if embodied should result in greatly improving their performance.

Laboratories Listing Symbol Trade-Marked



THE United States Patent Office on May 18 granted application of the American Gas Association for trade-mark registration of its Laboratories Listing Symbol. This emblem is employed for designating gas appliance accessories which comply with applicable American Standard Listing Requirements. The action taken supplements trade-marking, somewhat over a year ago, of the Laboratories Approval Seal which is employed to designate gas appliances complying with respective American Standard Approval Requirements.

The Laboratories Listing Symbol serves as the official marking of all certified accessories used on gas appliances such as thermostats, automatic pilots, burner valves, semi-rigid tubing and fittings and many others.

ASSOCIATION CONTRASTS

(Continued from page 283)

the secondary cracking of the hydrocarbon vapors produced by the primary distillation of coal, they did not understand the connection between the volume of free space and area and temperature of heated wall above the top of the charge in a retort and trouble with stopped standpipes, thick tar in hydraulic mains and naphthalene in the distribution system. So when the higher retort temperatures obtainable with the new recuperative benches resulted in such trouble many of them could not think of any way of avoiding it except to drop back to lower temperatures at the expense of retort yields.

In contrast with this it is probable that ninety per cent of those at the 1940 luncheon were college men and that many had won postgraduate degrees and rejoiced in the title of "Doctor." Also that all had at least a fair knowledge of chemistry and were well posted on two stage combustion and on the secondary cracking of hydrocarbon vapors. This comparison applies, of course, only to the Technical Section, since that is the counterpart of the American Gas Light Association. Few of the members of the other Sections would have been eligible for it and this widening of eligibility forms another contrast between 1888 and 1940.

It has been interesting for one actively connected with the gas business and gas associations during all the fifty-two years to note these changes, especially since with reference to the associations in the first thirty of those years he can say with Aeneas "quorum magna pars fui."

COMMERCIAL SALES CONFERENCE

(Continued from page 278)

"Building Sales Through Dealer-Utility Cooperation," E. J. Shermire, Detroit, Mich.

"You should keep commercial gas equipment on your sales floor at all times, and hold frequent demonstrations to show your dealers the difference between modern, approved equipment and just another stove," admonished Mr. Shermire in suggesting methods of dealer-utility cooperation. "Further," he said, "I believe the gas company should make adjustments and do other service work on approved merchandise sold by dealers with the same willingness that they do on their own sales." As for cooperation with the manufacturer, Mr. Shermire feels that the utility should, in view of the relatively small territory it serves, recognize the greater intensity of coverage it can supply as over and against the manufacturer's representative who must cover large territories, sometimes several states.

"A Case Study of Gas Summer Air Conditioning in Miami Beach," C. D. Littlefield, Miami Beach, Fla.

Four outstanding air conditioning jobs in Miami Beach (two for comfort and two for process) involving direct dehumidification with gas equipment, were described by Mr. Littlefield to demonstrate the desirability of dehumidification in all Southern air conditioning. A 50 per cent relative humidity was found sufficient in an office building and in a night club, although in the latter considerably lower dry-bulb temperatures were necessary than in the former. In a warehouse where furniture, rugs, and the like are stored, a 60 per cent relative humidity with only incidental control of dry-bulb temperature was adequate, whereas in a seed company plant where dehumidification was adapted to the retardation of pregermination due to high humidities, 46 per cent relative humidity was required.

In summary, Mr. Littlefield said that "it appears that humidity control has a definite place in Florida air conditioning—accounting for better than 50 per cent of the total load, producing atmospheric conditions in which each person becomes more or less his own refrigeration plant by evaporation of personal moisture, permitting in commercial applications the most satisfactory level of moisture content for the well-being of product in the air conditioned space."

"Looking Forward With Commercial Gas Refrigeration," George S. Jones, Jr., Servel, Inc., Evansville, Ind.

As vice-president and general sales manager, Mr. Jones expressed the current feeling of Servel, Inc., with regard to the market, the product, and the selling program in the new field of commercial gas refrigeration. He emphasized the tremendous possibilities for the sale of gas service in the refrigerating capacity-range embraced by Servel equipment, and in those territories where gas rates put us in advantageous competitive positions. It was brought out that refrigeration sales to commercial enterprise should not be limited to the three water-cooled commercial units now available, but should also involve the sale of large domestic boxes.

He announced, "We can look forward in the immediate future to stepping-up the capacities of our water-cooled commercial units to the extent of 10 to 20 per cent. . . . In addition, we are only just now able to say that we do have an air-cooled unit which gives us more than 400 lbs. I.M.E. . . . and we have made progress in the adaptation of our largest domestic-size unit for commercial application to cover a considerable part of the market that exists between the capacity of the current 11-foot domestic box and the new 400 lbs. I.M.E. commercial equipment."

Therefore, it appears that commercial sales departments can now supply gas refrigeration for any size job up to 1100 lbs. I.M.E. Mr. Jones offered the full cooperation of his organization to utilities interested in developing careful market analyses, sales programs and rate studies in connection with anticipated new commercial refrigeration load—and suggested points of view to adopt in such planning.

"What Our Industrial Gas Publicity and Advertising Programs Mean to You," Harry W. Smith, Jr., New York, N. Y.

To dramatize the sales job in behalf of gas-for-industry being performed by the

advertising and publicity activities of the A. G. A. Industrial Gas Section, Mr. Smith marked up giant enlargements of representative industrial gas advertising and publicity articles by way of showing that "every headline, every photograph, every drawing and every phrase is designed specifically to help you sell." Each technique you use in personal sales activity has its counterpart in "selling-in-print," he asserted. The volume of industrial gas publicity and advertising done by the Association was calculated in terms of "5,664,000 printed sales talks (ads or editorial features) per year, figuring only one reader for each copy of each magazine in which our type-selling appears."

Some 180 men from 23 states attended the Conference, held in the South for the first time since the inception of this annual feature in 1933. Sessions were presided over by Franklin T. Rainey, chairman of the Section; H. Carl Wolf, vice-chairman of the Section; Charles W. Gale, Knoxville, Tenn., and Arthur M. Apmann, Derby, Conn.

Personnel Service

SERVICES OFFERED

Research Engineer, 13 years' chemical and physical laboratory experience on pipe coatings, corrosion, gums, paints, metals, water, oils, coke—all materials used in production and distribution and utilization of gas plus gas plant control and research. Graduate Chemical Engineer, married (36). 1366.

Advertising and sales promotion man, accustomed to handling entire operation, with additional advertising agency experience. Outstanding record of success extending over ten years. Important committee posts. Now employed. Interested in responsible position with utility or manufacturer. Best of references. 1374.

Distribution Superintendent or Engineer: Eight years' experience with leading natural and manufactured gas companies on operation, maintenance, pressure control, appliance testing and servicing, customer service and appliance educational activities. Graduate engineer (B. S. and M. S. degrees); now employed; excellent references; (35) married. 1375.

Twenty years' experience in utility field—Customer's accounting (all installations), customer accounting cost surveys and analyses, personnel and educational direction, employee and public relations. 1376.

Sales executive with background of sales promotion—merchandising—dealer helps—publicity experience—thorough knowledge of co-ordinating all phases of marketing—harnessing energies of dealers behind planned promotions—ability to plan, direct and execute, have produced outstanding results. Good personality (33) married—highest caliber references. 1377.

Sales promotion man for large distributor of gas appliances desirous of making change. Past three years devoted exclusively to promotion gas refrigeration—Establishing dealers, training retail salesmen, holding sales meetings—trailer activities and carrying out all promotions. Best references as to ability and character. 1378.

SERVICES OFFERED

Treasurer-comptroller desires connection for utilization of experience gained in twelve years of financial management covering all phases of holding, management and operating company activity. Versatile, aggressive, excellent financial background and references, excellent health. Will consider duties as assistant at reasonable remuneration and ability proven. (40) 1379.

Advertising-public relations. Four years' experience preparing institutional, appliance advertising and publicity for utilities in all parts United States. Planned budgets, schedules, dealer cooperative campaigns. Handled customer surveys; rate, industrial and community development advertising. Prepared sales literature and newspaper, employees' manual, training courses. Married (26). College graduate. Location immaterial. 1380.

Publicity—Public Relations—Experienced man, eleven years newspaper and press association background, plus nine years active and varied publicity and public relations work for trade associations and corporations. Widely traveled; excellent contacts. Able conversant with all phases of work including house organ editing, dealer and consumer relations, etc. (40) 1381.

POSITIONS OPEN

Salesman wanted for Iowa and Nebraska territory, by one of the largest manufacturers of coal, oil and gas-fired heating and air conditioning equipment. Give complete information and photo in first letter. 1382.

Engineer wanted with practical knowledge of heating and air conditioning equipment, installation work, and control apparatus. By large nationally known manufacturer of oil, oil and gas-fired heating and air conditioning equipment. Give complete information in first letter, including photo, if available. 1383.

Manufacturer of gas air conditioners, gas heaters, and prefabricated ducts has territory open for manufacturers' representatives in Metropolitan New York and New England. Liberal commissions. No objection to competing lines. 1384.

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